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MASTER’S THESIS

**THE EFFECTS OF BEHAVIORAL ECONOMICS ON
CONSUMER DECISION MAKING BEHAVIOR:
AN APPLICATION OF NUDGE THEORY**

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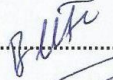
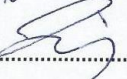
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I hereby declare that this master's thesis titled as "The Effects of Behavioral Economics on Consumer Decision Making Behavior: An Application of Nudge Theory" has been written by myself in accordance with the academic rules and ethical conduct. I also declare that all materials benefited in this thesis consist of the mentioned resources in the reference list. I verify all these with my honour.

Date

...../...../.....

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ABSTRACT

Master's Thesis

The Effects of Behavioral Economics on Consumer Decision-Making Behavior: An Application of Nudge Theory

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In today's world, the nudge theory is one of the most popular concepts of behavioral economics. The theory of nudge has gained great importance in recent years due to its explanatory power on individuals' decision-making processes.

In daily life, consciously or unconsciously, individuals make many decisions and decision-making process is inevitable for human beings. In order to get maximum utility, humans always try to make perfect decisions by evaluating given alternatives. However, individuals can encounter different bottlenecks in their decision-making processes due to human tendency to irrational behaviors. Such problems can be solved by nudge theory. The nudge theory aims to lead individuals to make better choices in their lives, thus this theory can contribute to consumer decision-making behavior.

The academic literature indicates that there is a need in the literature for further investigation of nudge theory. Since the areas where the nudge theory can be applied seem to be developable, an application of nudge theory is carried out in order to develop new contemporary marketing strategies. This study is the first study about nudge theory application in Turkey.

The aim of this study is to measure the effects of nudge theory on consumer purchase intention. In addition, the reasons why consumer decisions are affected by nudging are investigated by using theory of reasoned action.

This research study includes three different types of healthy eating nudges and product involvement type (high & low). In order to measure nudging effect, six different questionnaires are applied to 461 respondents. The regression analysis, paired samples t-tests and independent samples t-tests are used for analysis. The results indicate that the nudging is effective on consumers' purchase intention. Subjective norms, attitudes, health consciousness level and liking behavior of consumption product can be the reasons why people are affected by nudging.

Keywords: Behavioral Economics, Nudge Theory, Consumer Decision-Making Behavior, Healthy Eating Nudges, Product Involvement



ÖZET

Yüksek Lisans Tezi

Davranışsal Ekonominin Tüketici Karar Verme Davranışı Üzerine Etkileri:

Dürtme Teorisi Uygulaması

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Günümüz dünyasında, dürtme teorisi davranışsal ekonominin en yaygın genel kavramlarından biridir. Dürtme teorisi, bireylerin karar alma süreçleri üzerindeki açıklayıcı gücünden dolayı son yıllarda büyük önem kazanmıştır.

Günlük yaşamda, bilinçli ya da bilinçsiz olarak, bireyler birçok karar alır ve karar alma süreci insanlar için kaçınılmazdır. Maksimum fayda sağlamak için insanlar verilen alternatifleri değerlendirerek her zaman mükemmel kararlar almaya çalışırlar. Bununla birlikte, bireyler irrasyonel davranışlara eğilim gösterdikleri için karar alma süreçlerinde farklı darboğazlarla karşılaşabilirler. Bu tür problemler dürtme teorisi ile çözülebilir. Dürtme teorisi, bireylerin yaşamlarında daha iyi seçimler yapmalarını sağlamayı amaçlar, böylece bu teori tüketici karar verme davranışına katkıda bulunabilir.

Akademik literatür, dürtme teorisinin daha fazla araştırılmasına ihtiyaç olduğunu göstermektedir. Dürtme teorisinin uygulanabileceği alanlar geliştirilebilir gibi görüldüğünden, günümüze ait yeni pazarlama stratejileri geliştirmek için dürtme teorisinin bir uygulaması gerçekleştirilmiştir. Bu çalışma, Türkiye'deki dürtme teorisi uygulaması hakkında yapılan ilk çalışmadır.

Bu çalışmanın amacı, dürtme teorisinin tüketici satın alma niyeti üzerindeki etkilerini ölçmektir. Ayrıca, tüketici kararlarının dürtmeden etkilenmesinin nedenleri gerekçeli eylem teorisi kullanılarak araştırılmaktadır.

Bu araştırma çalışması, üç farklı tipte sağlıklı beslenme dürtmesi ve ürün ilgilenim seviyesi (yüksek ve düşük) içermektedir. Dürtme etkisini ölçmek için 461 katılımcıya altı farklı anket uygulanmıştır. Analiz için regresyon analizi, bağımlı örneklem t testi ve bağımsız örneklem t testi kullanılmıştır.

Sonuçlar, dürtmenin tüketicilerin satın alma niyetinde etkili olduğunu göstermektedir. Öznel normlar, tutumlar, sağlık bilinci düzeyi ve tüketim ürününün beğenilmesi, insanların dürtmelerden etkilenmesinin sebepleri olabilir.

Anahtar Kelimeler: Davranışsal Ekonomi, Dürtme Teorisi, Tüketici Karar Verme Davranışı, Sağlıklı Beslenme Dürtmeleri, Ürün İlgilenim Seviyesi



**THE EFFECTS OF BEHAVIORAL ECONOMICS ON CONSUMER
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THEORY**

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ABBREVIATIONS

M	Mean of Purchase Intention Results
Nudge 1	Nutritional Labeling Type of Nudge
Nudge 2	Hedonic Enhancements Type of Nudge
Nudge 3	Healthy Eating Calls Type of Nudge
PT	Prospect Theory
TRA	Theory of Reasoned Action
TPB	Theory of Planned Behavior



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INTRODUCTION

In today's world, one of the most popular topics is "behavioral economics". Because of the scarce resources, understanding and explaining the human behaviors and creating strategies relating to these behaviors gained importance in businesses. The behavioral economics subject relates to numerous field such as marketing, economics, finance, consumer behavior and psychology.

In 2002, Daniel Kahneman and Vernon L. Smith won the Nobel Economics Prize with behavioral economics topic. Afterwards, the behavioral economics became the trending topic and economists have focused on the topic in their later studies. This trending topic clarifies humans' decision processes. In addition, it enables to explain the behavior of consumers in daily lives. Moreover, Richard Thaler won Nobel Prize in economics in 2017 thanks to his contributions to behavioral economics. Due to these circumstances, popularity of behavioral economics increased.

In standard economic perspective, humans are rational and they always make rational decisions in their daily lives. According to this opinion, people always try to maximize their utilities and try to minimize their losses. Although standard views can explain many economic issues, some of them cannot be explained by using standard economics assumptions. In other words, the standard economic model cannot clarify some of the behavioral actions such as economic anomalies that occur in the market.

According to the behavioral economics, humans are irrational thus; behavioral economics can give an answer to some kind of anomalies in the economy by interpreting human behaviors based on its concepts. Because of this explanatory power, the studies about behavioral economics have become important. In addition, recent studies indicate that humans are not rational decision makers; their behaviors include numerous irrationality (Thaler & Sunstein, 2017). Ho, Lim and Camerer (2006) emphasized that behavioral economics is an extended version of equilibrium models and rational decisions; it also considers the previous economic models.

The objective of companies is always to get competitive advantage in order to provide sustainable growth. Therefore, companies need to develop different strategies in order to survive in complex, uncertain, ambiguous and volatile business

game. In order to formulate new strategies, analyzing the behavioral economics concepts' relationship with the consumers decision-making behavior will be beneficial for the firms. In addition, it can lay the groundwork for developing contemporary strategies to get competitive advantages in the marketplace.

Kotler (2016) mentioned that marketing and behavioral economics have an important relationship. Marketing is one of the most important key functions of the businesses. Developing new marketing strategies can differentiate the businesses in their fields. Thus, evaluation of behavioral economics concepts is beneficial for developing marketing applications.

The nudge theory is one of the most popular concepts of behavioral economics that is developed by Thaler and Sunstein (2008). In the literature, as it is observed that there are many important researches about nudge theory. However, application of nudge theory is not implemented in Turkey before. The previous scientific studies are investigated and one of the genuine nudge theory applications is designed based on the studies in the literature. This application contains three different healthy eating nudge types (Cadario and Chandon, 2018; Reisch, Sunstein, Rauber, 2017) and product involvement level (Two products in the same category, tablet chocolate as a low involvement product, truffle chocolate as a high involvement product).

In this research, the main aim is to determine the effects of nudge theory on consumer purchase intention of healthy consumption products. Moreover, as a second objective, the reasons why consumers' purchase intentions are affected by nudging are examined.

This thesis contains three chapters. In the first chapter, the behavioral economics and its concepts are briefly explained. The second part of the first chapter includes nudge theory. The nudge theory and related concepts such as choice architecture, libertarian paternalism, rules of nudges, characteristics of nudges, types of nudges, ten main nudges, healthy eating nudges, the process of nudge development and nudging applications are explained in details. In the literature review, the contemporary studies about the topic are clarified.

In the second chapter of this study, the consumer behavior and consumer decision-making behavior are investigated. Types of buying decision behavior, consumer decision process, bottlenecks in decision process and related theories such as TRA, TPB are explained.

The last part of the study includes the research methodology. Data analyzing and findings are given in details. The regression analysis, paired samples t-tests and independent samples t-tests are used in order to test related hypotheses. The implications of this research are explained in conclusion part of this study.

The results of the study indicate that nudging creates a value for both consumers and the companies. Nudges can lay the groundwork for developing contemporary marketing strategies for the companies in order to gain competitive advantages in the market and the consumers can make better choices in their lives.

CHAPTER ONE

BEHAVIORAL ECONOMICS AND NUDGE THEORY

1.1. BEHAVIORAL ECONOMICS

1.1.1. Definitions of Behavioral Economics

One of the most popular topics is “behavioral economics” in today’s world. In the literature, according to Mullainathan and Thaler, “Behavioral economics is the combination of psychology and economics that investigates what happens in the markets in which some of the agents display human limitations and complications” (Mullainathan and Thaler, 2000). According to Wilkinson (2008), behavioral economics relates to human behavior contains scarce resources allocation.

The literature indicates that economic predictions are made better by using behavioral economics clarifying economic decision making of individuals based on psychological insights.

In addition, Camerer and Loewenstein state that “Behavioral economics increases the explanatory power of economics by providing it with more realistic psychological foundations” (Camerer and Loewenstein, 2004:3). Because of this explanatory power, investigating the concepts of behavioral economics becomes more important.

In addition to these important definitions, the behavioral economics try to understand consumer insights to improve related business activities. The consumer insight implies analyzing trends in human behaviors. By analyzing these trends, services or products, which are provided by the companies, can be enhanced.

In recent years, Daniel Kahneman, Amos Tversky, Richard H. Thaler, Cass R. Sunstein and Dan Ariely are the most important behavioral economists and the contemporary studies are developed based on their studies.

1.1.2. The History of Behavioral Economics

The classical economics view that is a way of thinking in economics was developed at the end of the 18th century and at the beginning of 19th century.

“The Wealth of Nations” is one of the most important books that form a basis for classical economics view, which was written by Adam Smith in 1776. He is mostly known for “invisible hand” idea. In addition to this work, Adam Smith (1759) had another important work named “The Theory of Moral Sentiments”. This work is crucial for the behavioral economics because it includes individuals’ psychological insights. Thus, it provides a basis for development of behavioral economics.

According to behavioral economics, Loewenstein and Camerer (2004) indicated that Smith’s opinion has a basis of the loss aversion concept related with prospect theory (PT). The theory emphasized that people tend to be affected by losses more than equivalent gains, which was extended by Adam Smith’s (1759) previous studies.

The classical economics approaches underpin the origin of the neoclassical economy. According to neoclassical economy, which is also called standard economic model, humans are rational decision makers and they always try to increase their own utilities. The standard economic model assumes that people have all related information about the decision making process. Because of this knowledge, people always tend to be act rationally in their decisions making processes.

Another assumption is the fact that people always seek profit, so they can easily reach the optimal choice when they evaluate the alternatives in the market as a consumer.

The neoclassical approach uses the classical supply and demand curve as a base of explanation of economics. The neoclassical economics creates a theoretical framework for economists. In this aspect, this theoretical framework is beneficial for economists in explaining of the economic behaviors of the human beings. In addition, neoclassical economics benefited from mathematical models in order to explain economic issues in details. For instance, the neoclassical economist Daniel Bernoulli

(1738) was a creator of choice under risk theory. He clarified the risk aversion by using diminishing marginal utility of money (Wilkinson, 2008).

In consumption society, people always try to enhance their utilities and their satisfaction degrees. Their preferences are directly related to their personal decisions in their daily lives. On the other hand, companies always try to maximize their profits. Therefore, according to this system, the optimization occurs inevitably. The supply and demand equilibrium is used to explain the economic situations. At the equilibrium point, the resource allocations of goods are at the most efficient condition. Consumers buy goods at the same given price, which is also offered by the supplier companies. Thus, at this point, the balance occurs.

The standard economics ideas are based on the rational choice theory. The rational choice theory tries to explain the both economic and social behaviors of the human beings in order to understand and interpret the economic events. According to this theory, people make rational decisions. It assumes that people have full information about the decision situation and they have full capability to evaluate the options. In other words, individuals are capable of choosing best alternatives in given options.

Mathematical Physics Theory was written by Edgeworth (1881) and his study contains social utility model that describes the bargaining status of two people. Moreover, the study includes some psychological findings. The psychology was new emerging discipline in those years. In addition, Bentham who introduced the utility concept made contribution to topic of consumers' psychology.

In the twentieth century, psychological factors affecting the works of economists were still being discussed by some economists such as Keynes, Pareto and Fisher. However, psychology was ignored in that period. In brief, during that time, general tendency was to keep psychology out of the economy.

The standard economic model cannot answer some of the economic actions by using mathematical models so human psychology should be considered to explain some economic events. Thus, behavioral economics science is crucial.

Bounded rationality that is one of the important concepts of behavioral economics was introduced by Herbert Simon (1956) who was Nobel Prize winner of economics in 1978. According to Simon, bounded rationality explains cognitive limitations that people face in obtaining and processing data.

Between 1950s and 1960s some contributions were made to Simon's study by Ellsberg, Schelling, Allais, Markowitz and Strotz. In these studies, main themes are economic anomalies and theoretical developments.

Actually, the behavioral economics came to exist in 1970s. In the literature, two studies revealed the behavioral economics concepts. One of them is Daniel Kahneman's and Amos Tversky's article, "Prospect Theory: An analysis of decision under risk" that was published in economic journal called *Econometrica*, in 1979. Although Kahneman and Tversky had previous studies related the behavioral economics topics, the prospect theory indicates some new fundamental notions. These notions relate to loss aversion, measurement of utility and reference points.

In addition, the second article is Richard Thaler's (1980) article named "Toward a positive theory of consumer choice". The mental accounting concept was introduced by this study.

Kahneman's (2011) "Thinking Fast and Slow" book has also contributed a lot to the literature. In 2008, Thaler and Sunstein developed another behavioral economics concept and they published a book called "Nudge". In addition, Dan Ariely who is also one of the best-known behavioral economists has some studies and books about the topic. For example, "Predictably Irrational" was written by Ariely in 2008. He explained the important concepts of behavioral economics with experimental examples.

Nowadays the popularity of the nudge theory is increasing. The governments and the companies try to create nudging strategies in order to get competitive advantage. However, studies are not enough in this area. Therefore, the nudge application is designed for the research topic of this study.

1.1.3. Main Terms of Behavioral Economics

1.1.3.1. Dual Process Theory in Behavioral Economics

According to psychology, two different kinds of processes create thoughts; one of them is our conscious side and the other one is our unconscious side. It is named dual process theory.

In behavioral economics, Daniel Kahneman (2011) termed these two different decision making processes as System 1 and the System 2. According to Kahneman (2011), System 1 makes decisions automatically and it includes emotions. In addition, System 2 is based on reasoning. It means that second system is more rational. Many concepts of behavioral economics such as cognitive bias and heuristics are the outcome of intuitions and unconscious automatic decision (System 1).

Nudges are also classified as System 1 nudges and System 2 nudges. According to System 1 nudges, such as default rules and graphic warnings, decision-making process is automatic. On the other hand, System 2 nudges contains self-awareness in decision-making (Sunstein, 2017).

1.1.3.2. Bounded Rationality

Bounded rationality was introduced by Herbert Simon (1956). It explains cognitive limitations that people face in obtaining and processing data. Bounded rationality has resemblance to the social-psychological concept. In this concept, humans are defined as "cognitive misers" (Fiske & Taylor 1991). Moreover, it represents main idea of human psychology that lies behind the behavioral economics. The rationality of human is bounded due to limited humans' thinking capacity and limited available time to decision-making process.

According to Simon's opinion, people cannot reach all information about decision problem. Thus, they are not capable of making completely rational decisions.

1.1.3.3. Homo Economicus

Homo economicus is a crucial term for the economics literature. The term is an economic term that is used to define the rational humans. The only goal of rational humans is to maximize their own utilities. "Economic man" is another phrase that has

the same meaning with homo economicus. However, in reality, people cannot make rational decisions in their lives because of the bounded rationality. In other words, they can face with some cognitive biases in their decision process. Thus, homo economicus contrasts with behavioral economics concepts.

1.2. THE APPROACHES OF BEHAVIORAL ECONOMICS

Prospect theory, endowment effect, framing effect, heuristics and biases, anchoring, mental accounting and nudge theory are important behavioral economics concepts. In this part, these concepts are briefly explained. The nudge theory is the main topic of this study, thus this theory is explained in details.

1.2.1. Prospect Theory

Prospect Theory was developed by Daniel Kahneman and Amos Tversky (1979). Expectancy (prospect) theory, which is a behavioral theory, indicates how people make a decision between probabilistic options that contain uncertainty and risk, such as probability of losses or earnings.

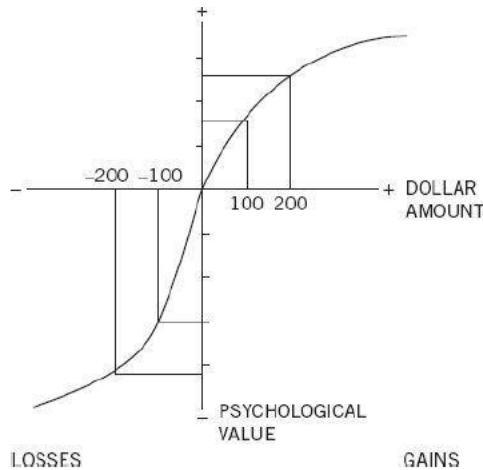
In behavioral economics, it is known that people tend to act irrationally, so they do not always act by considering expected utility theory. PT explains humans' decision-making process better than the expected utility theory due to psychological considerations.

In cognitive psychology, prospect theory shows that people decide based upon expected utility by considering reference points instead of final absolute results. According to the prospect theory, the value function is more appropriate to explain the decision making process of humans.

When there is a risky and uncertain situation, humans tend to make irrational decisions. According to the PT, people tend to be affected from losses more than equivalent gains. The value function in figure 1 shows that the S curves are not symmetrical to each other. Kahneman and Tversky (1981) mentioned that the curves are convex below the reference point and concave above it (e.g. the value difference between gains of \$40 & \$50 is higher than the gains of \$160 & \$170).

The most basic example of this theory is sadness of a person who loses 500 TL is higher than the happiness of a person who gains the same amount that is 500 TL. The main point is, when the degree of happiness and sadness is measured, it can be observed that the effect of losses is higher than the equal amount of the gains.

Figure 1: Value Function



Source: Kahneman, 2011: 283

1.2.2. The Framing Effect

The effect of framing is one of the cognitive biases that people respond to various choices in different ways based on how choices are presented to them. Three types of framing are indicated in the literature. These are attribute, risky choice and goal framing. Decisions of consumers can be easily affected by frames. For instance, ground meat labeled as 15% fat or 85% lean can affect humans' choices, which is a good example of attribute framing.

Asian disease example is the classical example of the theory that was presented by Tversky and Kahneman (1981). The university students were selected as a sample for risky-choice framing example.

According to results of first problem that are shown in Figure 2 (Program A and B), people avoid from risk (72% people chose the program A). The results of second problem (Program C and D) show that people take a risk in their choices (78% people chose the program D). Although all choices stated the same thing, wording of

sentences were different. Therefore, people made different choices. This result indicates that people can easily be confused by frames.

So if the option is positive or includes gains, people tend to avoid risk. If the option is negative or includes losses, people tend to take risk.

Figure 2: The Problem of Asian Disease

If Program A is adopted, 200 people will be saved. [72 percent] If Program B is adopted, there is 1/3 probability that 600 people will be saved, and 2/3 probability that no people will be saved. [28 percent] Which of the two programs would you favor?	If Program C is adopted 400 people will die. [22 percent] If Program D is adopted there is 1/3 probability that nobody will die, and 2/3 probability that 600 people will die. [78 percent] Which of the two programs would you favor?
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Source: Kahneman and Tversky, 1981:453

For instance, an individual attends painting course and the annual price of course is €480. In order to increase the attendance rate, participants can be nudged by framing €480 yearly price of this course as a €40 monthly price or €10 weekly price. When the same case is shown in different versions, the decisions of people can be changed by framing effect.

1.2.3. The Endowment Effect

The endowment effect is highly related with the terms status quo bias (Samuelson & Zeckhauser, 1988) and loss aversion. Psychologically, humans tend to protect their status quo so their decisions are shaped by this tendency. The endowment effect clarifies some of the decision anomalies.

Sinden and Knetsch (1984) made an experiment that relates to an endowment effect. In this experiment, respondents were given a lottery ticket or two dollars. Then, they were given a chance to exchange the money with the ticket or exchange the ticket with the money. The results showed that many respondents did not change the given objects.

Another experiment of Knetsch (1989) that was about mugs and chocolates showed the similar results. In this experiment, one group took chocolates, other group took coffee cups, and they had an opportunity to change the cups with chocolates or vice versa. Only few amount of respondents changed their cups or chocolates.

Kahneman, Knetsch and Thaler (1990) made some experiments (results were published in 1991) about endowment effect to understand its effects on individuals' decision processes. According to this classic mug example, there were three groups (buyers, sellers, choosers). In this experiment, the coffee cups were given to the first group of students and they were asked to sell the mugs 0.25-9.25 dollars range. Second group of students were asked to purchase these mugs in same price range. In addition, there was one more group called choosers. This group was not given a mug and they were only asked for each prices to choose the mugs or the equal amount of money.

The mean price offered by the students who took a role as sellers were \$7.12, the purchasers offered \$2.87 and the choosers offered \$3.12.

According to this experiment results, people tend to give more value to the objects that they own and they give less value when they do not have the objects. This concept is called endowment effect. Because, when the actual situation is considered as a reference point by the people, they will perceive any change as a loss.

1.2.4. Heuristics and Biases

The heuristics and biases are crucial for understanding decision-making process of humans. In the literature, heuristics are explained as cognitive shortcuts that simplify human decision processes. Indeed, cognitive biases occur due to the heuristics.

Generally, people cannot focus on all aspects of the problems when problems are complex. Due to this reason, they use mental shortcuts. Because of these shortcuts, some errors occur that are called cognitive biases. In other words, judgments of people are restricted. Simon (1956) also mentioned this situation in bounded rationality concept.

In previous studies, some important heuristics are clarified such as availability, anchoring and representativeness heuristics (Tversky and Kahneman, 1974). Shah and Oppenheimer (2008) contributed to topic with their examples that contain scarcity heuristics, brand name heuristics and price heuristics.

In the literature, the most prominent heuristics is representativeness. When judging the probability of any event, humans make many evaluations. However, they are generally affected from heuristics like representativeness heuristics.

Kahneman and Tversky (1974) emphasized that the probability of a case or an object X of belonging to Y class can be judged by looking at the similarity of X to Y and representativeness is used in order to judge probability of belonging.

For instance, another representativeness example is, if the product is expensive and the product package is well designed, people tend to think that the product quality is high (Kardes, et al., 2004).

1.2.5. Anchoring

Different starting values cause different predictions that are biased from the initial values. When people have first exposure to any number, he or she uses it as a reference point in his or her judgments. These reference points are called anchors and these reference points can be occurred by logical or illogical computations. In other words, humans make some numerical predictions with initial starting points to make their final decisions.

1.2.6. Mental Accounting

Thaler (1999) defined mental accounting as a set of cognitive activities used by people and households. These cognitive activities are used to evaluate, organize and monitor the financial operations.

The mental accounting has three major elements. The first one includes how an individual perceives and experiences the outcomes of any situation and it includes how an individual makes and then evaluates his or her decision. The other issue is assigning activities to related specific accounts. The last component is the frequency of account evaluation and classification of choices (Loewenstein & Rabin, 1998).

Moreover, Thaler (1985) gave some anecdotes about the mental accounting as examples. Assume that there are two different situations; in the first situation, an individual won the lottery two times and the first amount is \$50 and the other amount is \$25. In the second situation, an individual won a lottery that pays \$75. The question was asked to the respondents to understand in which situation they were happier. Most of them (64%) answered that they will be happy when they win twice.

Another example is that couples went fishing and they caught salmon. Firstly, they packed them and sent them to their city with using airline. However, the fishes are lost in this stage. Thus, airline paid them €300 and they spent €225 for dinner. However, this was the first time that they spent such a big amount at restaurant.

The other example is that Mrs. A admired a jacket with a price of €200 at the store, she wanted to buy it but she thought that it was expensive. Afterwards, her husband gave this jacket as a present for her birthday. As a result, she felt happy but actually, their bank accounts are joint.

In such cases, it can be observed that there are irrational behaviors. Mental accounting highly affects human choices. Consequently, these kind of behaviors can be explained by using mental accounting.

1.2.7. Nudge Theory

The nudge theory is chosen as a research topic of this thesis, thus the theory explained in details in the next part of the study.

1.3. THE NUDGE THEORY

1.3.1. Explanation of the Nudge Theory

In the daily life, people always encounter different decision-making situations. Decision making process is inevitable for human beings. Individuals are consciously or unconsciously make many decisions and they always try to make perfect decisions by evaluating the given alternatives in order to reach maximum utility. However, it is observed that the reality is different. Ariely (2009) mentioned that individuals always encounter cognitive biases in their decision processes, thus choosing the best alternative is getting difficult.

There are many decisions that cannot be answered by using the rational theories because mental shortcuts cause irrationality. Thaler and Sunstein (2008) added that humans are not Econs, in other words they have a tendency to make irrational decisions.

Behavioral economics concepts clarify the irrational behaviors better than the classical economics perspectives. Therefore, using behavioral economics concepts is beneficial to understand the consumer behavior.

One of the most popular theories about behavioral economics is a nudge theory. Richard H. Thaler and Cass R. Sunstein, the most known behavioral economists, wrote a book called “Nudge: Improving Decisions about Health, Wealth and Happiness” in 2008. This book is the main book of the topic and the contemporary studies are conducted based on their book. They defined the nudge theory as,

A nudge, as we will use the term, is any aspect of the choice architecture that alters people’s behavior in a predictable way without forbidding any options or significantly changing their economic incentives. To count as a mere nudge, the intervention must be easy and cheap to avoid. Nudges are not mandates. Putting the fruit at eye level counts as a nudge. Banning junk food does not. (Thaler and Sunstein, 2008:6)

As stated in the definition of nudge, it provides freedom of choices without changing economic incentives. Nudge theory has an explanatory power on human behaviors. Thus, the theory is used in consumer decision-making behavior studies.

When people make their last decisions, they are affected by many factors. During the decision making process, freedom of choice is crucial; the definition of nudge highlights this point (Kahneman, 2011; Hansen, 2016).

1.3.2. Nudge and Choice Architecture

“Choice architecture” which is an important term is defined by Thaler and Sunstein (2008). According to their definitions, choice architecture affects individuals’ choices by changing the contexts of the presented options. The settings can be arranged by using nudging, framing, decoy options or defaults rules. Furthermore, choice architects design the place or situation for people to make their decisions.

One of the most known behavioral economists Richard Thaler won the Nobel Prize in economics category, in 2017. Although the nudge theory has been discussed for years, the popularity of the topic has increased when Richard Thaler won the Nobel Prize due to his contributions to behavioral economics.

Humans are psychological beings and they are easily affected by external or internal factors during their decision making process. Nudges can be both external and internal (Ly et al., 2013). Nudge is one of the important factors that affect people's behavior and their attitudes. In this perspective, consumers' attitudes towards product purchasing can be investigated by using the nudge theory.

The most known example of the nudge theory is Carolyn's cafeteria that is given by Sunstein and Thaler (2008). According to this example, Carolyn aims to decrease unhealthy food consumption of students. Actually, she wants to reveal whether different food displays are effective on people's food choices or not. In order to achieve this aim, she decided to change just the way of food presentations. The experiment was designed and implemented in some school cafeterias. The comparison of food consumptions rates were made for cafeterias. Comparison results indicate that consumption rates of the products were changed depending on their presentations. In other words, nudging can change the consumers' consumption behaviour. In this example, Carolyn was called as a choice architect.

Consequently, the nudging strategy was implemented on consumers by rearranging the food options. Simply, for instance in some cafeterias, the healthy foods like vegetables were shown at the eye level while unhealthy ones were presented on higher or lower shelves, which is hard to reach. On the other hand, in other cafeterias unhealthy foods like fries were placed at the eye level. The foods that were shown at the eye level were consumed more.

Ly, Mažar, Soman and Zhao (2013) highlighted the key points of creating a nudge. They mentioned that the nudge rules should be considered when designing a nudge application. According to their example, there are two cafes and their common purpose is to decrease the unhealthy food consumption of students. For instance, the first cafe prohibits the sale of junk food or imposes a tax on related foods. On the other hand, the second cafe just changes its design in order to decrease the probability of

junk food choices. Healthy foods are displayed on shelves at eye level in the second cafe. The methods that are implemented by cafeterias are completely different from each other. It can be said that second cafe applies nudging.

The method of the first cafe includes banning and it violates the first rule of nudge (The first rule is that nudge provides freedom in choices). Moreover, the first cafe tries to affect the students' choices by restricting them financially and it violates another rule of nudge (Nudge aims to influence the human behaviors without changing their economic motives). As a result, second café has much more influence on humans' choices since nudging is applied.

The purpose of the nudge is directing people to make better choices in their lives. Thus, nudges are used in education, health, marketing, politics and economic decision-making areas. In addition, another aim of the nudge is to make life easier.

1.3.3. Libertarian Paternalism

Libertarian paternalism, which is one of the most important terms, was created by Thaler and Sunstein (2003). It is a paternalistic view but includes liberty. According to the nudge theory, freedom is vital in decision making, so the libertarian paternalism phrase is modified by Thaler and Sunstein (2003) to define the soft paternalism that is used in nudging.

1.3.4. Rules of Nudges

In the literature, there are some important rules to create “nudge”. These rules separate the nudge theory from other theories. According to Sunstein's study (2014), there are three crucial rules. The first one is “nudges provides freedom of choice”, the second one is “effectiveness & transparency” and the last one is the “requirement of evidence and testing.” These approaches are called liberty-preserving rules. When these three rules are applied into any policy, it creates a nudge. In other words, to generate nudging effect, these rules should be applied into the policy.

The first rule indicates that the nudges do not forbid any choices, instead the theory aims to direct people to make good choices. In this perspective, the decision

maker is free in his or her decision. Thus, this rule differentiates the nudge theory from any other views that include freedom restrictions.

Moreover, nudge theory does not support any change in economic incentives such as taxing cigarettes or alcohols.

1.3.4.1. Nudge Provides Freedom of Choice

The approach of freedom of choice is one of the main concepts of nudge theory. Sunstein (2014) mentioned that some nudges are defined as a “soft paternalism”. The reason behind this definition is that some nudges direct people to the certain way. According to the soft paternalism view, better decisions are shown to the decision makers without banning the bad decisions.

Although nudges direct people to the certain choice, there is always chance to choose other options in given alternatives. Thus, people are free in their choices. The most given example is GPS example for this situation. GPS shows people the specific routes that they want to go and it provides freedom of choice at the same time. In other words, people can always choose another way to go.

1.3.4.2. Effectiveness & Transparency

According to Sunstein (2014), all nudges should be transparent and clear. Particularly, the nudges that are implemented by government should be transparent since they are public nudges.

All over the world, many countries have interested in nudge theory applications. The behavioral insights team and nudge units are some example of nudge applications that are implemented in countries like England.

In addition, nudges are highly effective on changing humans’ behaviors. The interest of nudge increases day by day due to some reasons. One of the reasons is that nudges have low costs or they are costless.

Moreover, nudges are highly effective on human decisions due to the ease of obtaining results. The nudges related with economic savings can be given as an example for this situation.

In many cases, nudges have more influence than expensive policies. For instance, simplification, default effects and using social norms have bigger impact on people rather than economic incentives.

1.3.4.3. The Requirement of Evidence and Testing

The evidence is needed to understand whether the nudge is effective or not. This approach indicates the importance of evidence and experimental tests.

The governments or private institutions design convenient nudges according to the related situations. However, some nudges can be failed in practice. Therefore, the empirical tests should be done before making any nudge applications. Experiments results can enable to improve applied nudge. The experiments results can display the better alternatives of nudge implementations. Furthermore, the advantage of nudge experiments is that they can be made at a low cost.

1.3.5. Characteristics of Nudges

According to the literature, it can be said that nudges vary in their applications and characteristics. Mainly, nudges characteristics contain four dimensions (Ly et al., 2013).

The Figure 3 shows some nudge examples that belong to the related characteristics. The content of these characteristics can be clarified as,

1. Encourage vs. Discourage
2. Increasing Self-Control vs. Activating a Desired Behaviour
3. Externally-Imposed vs. Self-Imposed
4. Mindful vs. Mindless

Discourage nudges try to prevent undesirable human behaviors. Encourage nudges make the application of certain behaviors easier.

Self-control nudges try to help people in their decision process such as investing in a retirement. For instance, people sometimes do not make their decisions real like saving money and doing sport. Therefore, discrepancy occurs between actual behavior and actual decisions. Increasing self-control nudges try to prevent this

discrepancy. The human behaviors should be activated by using nudges in order to reach desired behavior, which is another characteristic of nudge.

Self-imposed nudges try to nudge people voluntarily. For instance, an individual decreases his or her credit card limit by himself or herself. The opposite version of nudge, which is an external-imposed version, influences behaviors by presenting available choices without forcing people to particular choices.

Mindful nudges direct people to cognitive decision-making process. For instance, mindful nudges can affect the intention to quit smoking and eat healthy foods. Mindless nudges lead people to make automatic decisions by using heuristics.

Figure 3: Examples of Characteristics of Nudges

		MINDFUL		MINDLESS	
		ENCOURAGE	DISCOURAGE	ENCOURAGE	DISCOURAGE
ACTIVATING A DESIRED BEHAVIOUR	EXTERNALLY-IMPOSED	Simplifying tax rules to make tax filing easier.	Placing signs to remind people not to litter.	Advertising that most people are recycling to increase recycling efforts.	Using fake speed bumps to discourage speeding ⁹ .
	EXTERNALLY-IMPOSED	Simplifying application processes for college grants to encourage higher-level education ¹⁰ .	Installing car dashboards that track mileage to reduce gas usage ¹¹ .	Automatically enrolling for prescription refills to encourage taking medication.	Placing unhealthy foods in harder to reach places ¹² .
BOOSTING SELF-CONTROL	SELF-IMPOSED	Maintaining an exercise routine by agreeing to pay a small penalty if a gym session is missed ¹³ .	Avoiding drunk driving by hiring a limo service beforehand ¹⁴ .	Joining a peer savings group to encourage saving money ¹⁵ .	Channelling money into a separate account to reduce the likelihood of it being spent ¹⁶ .

Source: Ly, Mažar, Soman and Zhao, 2013:8

1.3.6. Types of Nudges

In the literature, there are mainly two types of nudge, private nudge and public nudge. Thaler and Sunstein (2008) indicate that nudges can be classified as public or private actions that lead individuals to certain directions and at the same time, they provide individuals with an opportunity to go her or his own way. Caldwell (2018) mentioned that both nudge types are benefited from each other in many cases.

In this thesis, private nudge case study is applied to the consumers in order to understand the effects of nudging on consumer decision-making process. The purchasing intention of consumers is investigated by using effects of private nudges on consumer decision-making processes.

1.3.6.1. Public Nudges

The public nudges use behavioral insights in order to affect citizens' behaviors through public actions (Alemanno, 2015; Thaler & Sunstein 2008; Sunstein, 2014; 2018). The aim is nudging people to make good choices by using public actions.

1.3.6.2. Private Nudges

Mostly, the public nudges are used rather than the private nudges. The companies use behavioral interventions in order to maximize their profits. In other words, firms want to increase their sales so they try to increase consumption. Companies can also implement nudges in a good way as public nudges. For example, they can implement nudges to protect environment or support public health (Alemanno, 2015).

The brands of companies can use their marketing efforts and packages in order to nudge consumer for good intentions and behaviors. For example, a company can use environmental nudges such as reducing the air pollution (Thaler & Sunstein, 2008).

1.3.7. Ten Main Nudges

According to behavioral economist Sunstein (2014), there are ten important nudge types. Other nudging studies also support these main nudges. According to the literature review, ten main nudges are classified as below.

1.3.7.1. Simplification

“Keep it simple” is the main theme of this nudge type. Complexity always creates a problem for the people. People have some difficulties in decision-making process when there is a complex situation. In order to solve this problem simplification is needed.

The choices should be presented as simple as possible, so people can easily make choice from given alternatives. In addition, simplification strategies are also used in marketing applications (Freeman & Spenner, 2012). For example, putting clear and simple label on the products can be effective on consumer decision process. Thus, this nudge type is important to create marketing strategies. Moreover, simplification strategies are also used in health, education, recruitment programs and many other fields. For instance, if one of the health related programs offered by government cannot be presented to the citizens in simple way, the citizens can be confused so the efficiency of the programs will decrease.

1.3.7.2. Reminders

The reminders are highly effective on consumer behavior. Since people generally have a lot on their minds, they can forget what to do and the combination of postponement, inertia and obligation may come to exist.

When people do not engage in particular duty such as taking medicines, getting an appointment from a doctor or paying invoices, they can require a reminder for coming appointments and duties by message or email. A reminder is very effective and timing has an important impact on reminders. People can recall the critical information by using reminders. “Prompted choice” can be indicated as a closely relevant approach and people are asked if they want to make a choice rather than requiring to choose (Sunstein, 2014).

1.3.7.3. Default Rules

If one option is chosen by the choice architecture as a default option, it can reduce the time consuming in decision-making process. In addition, according to the many examples, default rules are highly effective on people’s choices. One of the most known examples is about organ donation. In organ donation example, there are two

types of implementation. One of them is opt in system and the other one is opt out system. The system changes from country to country. Some countries adopt opt-out, some of them adopt opt-in system.

According to opt out system, people directly become an organ donor without doing anything, but they have a chance to refuse to be an organ donor. So if they do not want to be an organ donor they should be opt out from the system. Many people do not change their given choice and thus organ donation increases in the countries that implement opt out system. Organ donation level is higher in Spain because they use opt out system. In addition, Turkey can be shown as an example of the country that uses opt in system. The studies show that opt-in system is directly proportional to low level organ donation (Thaler and Sunstein, 2008).

According to Eric Johnson and Dan Goldstein's (2003) organ donation study, if countries implement opt-out system, the donation level increases.

Moreover, another important example of default rules is automatic enrolment system for retirements or health related services. The retirement automatic enrolment provides people with significant savings. Thus, it is useful and beneficial for the people.

In many conditions, default rules are inevitable. Using default rules reduce time consuming in decision-making processes and it reduces other mental activities in decision processes.

1.3.7.4. Increases in Convenience and Ease

According to this nudge type, people tend to avoid difficult choices; people do not want to think about options. In other words, they want to make easy decisions. For instance, putting low cost products on visible shelves can be a great nudge for consumers (Kroese, Marchiori & Ridder, 2016; Thaler & Sunstein, 2008). It shortens the decision making time. Consequently, decision-making process becomes easier. In addition, putting healthy products on visible places in markets can increase the sales of these kind of products. Thus, this strategy is highly useful and applicable.

1.3.7.5. Warnings and Graphics

The aim of this nudge is taking attention of people by using warnings or graphics. If there is a risky situation, warnings that are presented publicly or privately can be useful.

This nudge can be applied in packaging design. For instance, the letters of words can be written with bold or different characteristics to take attention of consumers. In addition, different colours, bright colours, large fonts of writings can be catchy.

Moreover, if preferred option like “you can do behavior A rather than behavior B so that can reduce the risk” is presented to the people, the nudge can be more effective.

1.3.7.6. Uses of Social Norms

Using social norms as a nudge is highly effective on people. According to this nudge, when people learn what most humans do, they tend to act like them (Sunstein, 2014). If the message of social norm is more specific, nudging more effective on consumers’ decisions.

Moreover, bandwagon effect is related to social norms. In psychology, the bandwagon effect defines that human psychology is convenient to imitate other people. According to bandwagon effect, humans do not act depending on their own beliefs or opinions when they make decisions. Nudging people is easier by using social norms. Moreover, some harmful behaviors such as smoking and alcoholism can be decreased by using social norms (Sunstein, 2014).

Another example of social norms nudge is that the phrase of "X product is recommended by 95 % of consumers" is effective on purchase decision of X product.

Sunstein (2014) mentioned that “emphasizing what people should do” could be more effective than “emphasizing what people actually do.”

1.3.7.7. Disclosure

Disclosures can be private or public based nudges. Economic costs linked with energy use can be a disclosure example. The data provided by government or companies can be used as a disclosure nudge. Additionally, disclosure can be used in calorie labels of foods.

The effectiveness of disclosure nudges increases when the information is understandable and accessible by consumers. At this point, simplicity of disclosure application is highly important. Sunstein (2014) emphasized that disclosure nudges can be used to control public or private wrongdoing, negligence, illegality and corruption.

1.3.7.8. Informing Individuals about Their Previous Choices

Private sector and government have many data about people's previous choices such as electric invoices or health related expenses. According to Sunstein (2014), if this information is shared with people, they can be aware of their past choices' results. Thus, they can behave better in the future.

1.3.7.9. Pre-commitment Strategy

Humans have some purposes such as saving money, quit smoking and drinking in their lives. However, sometimes they cannot achieve their goals. In order to achieve their goals, pre-commitment strategies can be used. For example smoking cessation program can be used. When the action time (e.g. smoking cessation) is determined previously, the procrastination decreases.

1.3.7.10. Eliciting Application Intentions

This nudge aims to reveal the intention of people. If someone reveals intention of humans, people tend to be more involved in activities. In other words, people will be more likely to participate in any activity.

When the questions about health or other issues are asked to the people, their future behaviors can be affected in this direction (e.g. will you vaccinate your children? will you vote?). Moreover, indicating individuals' identity can be an effective tool to nudge people (e.g., you're a voter).

1.3.8. Applications of Nudge Theory

There are lots of nudging examples both in public and private cases. Furthermore, applications of nudge theory can be easily seen in daily lives. Nudging strategies can be used to make a profit or they can be used for non-profit aims.

The companies and governments always use nudges to change people's behavior in a better way. The government uses public nudges in order to lead citizens to make good choices.

In this part, some of the current life examples are given. According to Ly, Mazar, Zhao & Soman's (2013) example, if there are three different alternatives that vary depending on price and quality, most people tend to choose middle alternative. Hence, if a company wants more than a certain brand product sales, company can increase the sales of certain brand by surrounding the product with lower-end and higher-end alternatives. According to Ariely (2009), people tend to decide based on product comparisons, so his contribution supports this example.

For example, cell phone applications can be used as a nudge. These applications show the calorie amounts consumed by people daily or weekly. Another nudge example can be the messages that recall the doctor's appointments or last payment days of bills (Sunstein, 2014).

Some additional examples of nudges are given below,

- GPS System is a good example of nudging. If a person decides to go somewhere, GPS system acts like a choice architecture that offers potential routes to him or her. In this case, an individual can change his or her route, so this is up to them (Thaler, 2018; Sunstein & Thaler, 2008)
- For instance, the printers can be arranged to double-sided printing option. In this way, less paper is used so nudge can contribute to the protection of environment (Sunstein, 2014).
- Governments' website should be designed usefully so the citizens can reach the required information easily (Sunstein, 2014).
- Governments implement public nudges such as warnings on tobacco products and labels for energy efficiency (Sunstein, 2014).

The figures of following examples are given in Appendix 9.

- In Canada, Nestle designed Smarties product packages to help people consume the Smarties in healthier portions. In this example, the nudge is implemented on product packages (Alemanno, 2015)
- Ariel's detergent campaign that is called "turn to 30 °C" tries to nudge consumers to wash their products in lower degrees to decrease CO₂ emissions (Alemanno, 2015).
- Packaging design of chewing gum can be used as a nudge by providing a place for used gum at the same package (Alemanno, 2015).
- In Stockholm, the piano stairs is designed by using nudge theory so that people use stairs instead of escalators.
- Footprints symbols that are put on the roads show direction of bins by nudging people. Thus, people can throw away their rubbish into the bin easily thanks to nudging. Denmark uses this nudge as a public nudge.
- The road paintings can be great nudges for drivers in order to drive safer.

These examples have indicated that human behaviour can be affected by the environmental or contextual changes. As it can be observed from examples, nudge provides freedom of choices without changing fiscal incentives.

1.3.8.1. Price Changes

The price changes are not included in this study. According to the main explanation of nudge that is given by Thaler and Sunstein (2008), the price changes can be significant economic incentives so this study is implemented without considering price changes.

Moreover, one of the current articles mentioned that "price changes or sales promotions are also not considered nudges because they provide a direct economic incentive" (Cadario and Chandon, 2018:2). In addition, another study also supports the same idea. This study emphasizes that "significant change in economic outcome or incentives is not a nudge, a nudge may serve to highlight an economic incentive" (Ly, Mažar, Soman and Zhao, 2013:5). In this thesis, only the effect of nudge is evaluated in *ceteris paribus* condition.

Although, price changes are not indicated in this study, the definitions of products only show that the high involvement product is more expensive than low involvement one when two product groups are compared to each other. Thus, the only interpretation about price perception can be made for high & low involvement product comparison.

1.3.9. Advantages of Nudging Strategies

There are some important advantages of nudges. The articles, books and other related documents about the topic are examined (Thaler & Sunstein, 2008; Ly, Mažar, Soman & Zhao, 2013; Sunstein, 2014; Alemanno, 2015; Fahländer, 2017; Cadario and Chandon, 2018) and the advantages of nudges are classified into six part as below. The nudges,

1. Cost effective
2. Help to understand consumer decision making processes
3. Provide economic savings
4. Maintains freedom of choice
5. Direct people to make better decisions
6. Lay the groundwork to create new marketing strategies

Because of these advantages, development and implementation of nudges become important. In terms of marketing, nudges are highly effective on consumer behavior. Nudges are very useful in changing consumer behavior in a better way. Thus, investigating the nudge theory and formulating new marketing strategies depending on the theory can make easier to reach target customers.

Using default rules, simplification, disclosure and social norms can provide economic savings. For example, comparing consumers with their neighbors about their electricity usage can create a social effect that causes reduction in electricity usage. Thus, spending can be decreased.

1.3.10. Healthy Eating Nudges

In the literature, the studies mentioned about many different kinds of nudges such as healthy eating nudges that are used across the world to encourage healthy consumption (Chance, Gorlin & Dhar, 2004; Reisch, Sunstein & Gwozdz, 2017). In addition, they are used in order to reduce health-related costs (Reisch et al., 2017).

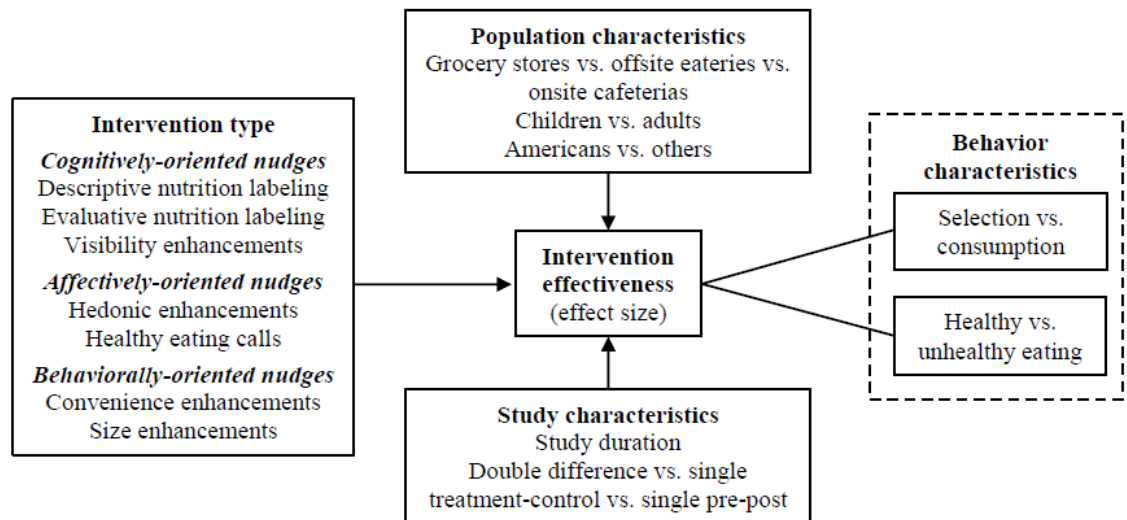
In psychology, according to the Hilgard (1980), mental activities can be categorized in three subtitles as cognitive, affective and behavior (conation). Three types of nudges are named as behaviorally, cognitively and affectively oriented nudges.

Currently, the study of “Which healthy eating nudges work best?” categorizes the specific versions of healthy eating nudges in three different subtitles. Cadario and Chandon (2018) clearly define these nudges and their effects in their study. According to this meta-analysis, three subtitles include seven different healthy eating nudges.

In addition, Sunstein & Thaler (2008) put emphasis on the importance of the health nudges. In the literature, these healthy eating nudges are often used in the same names such as labeling nudge and health nudge. The starting point of the healthy eating nudges came from Hilgard’s (1980) study.

Moreover, according to Cadario & Chandon’s (2018) study, “descriptive and evaluative nutritional labeling” and “visibility enhancements” are cognitive nudge types. “Hedonic enhancements” and “healthy eating calls” are affective nudge types. “Size enhancement” and “convenience enhancements” are the types of behavioral nudges. According to the literature, one of the conceptual frameworks of healthy-eating nudge is shown below in Figure 4.

Figure 4: Conceptual Framework of Healthy Eating Nudges



Source: Cadario and Chandon, July 2018:5

1.3.10.1. Implemented Nudge Types in this Research

In this thesis, specifically three types of healthy-eating nudges that are nutrition labeling as a cognitive nudge and hedonic enhancements, healthy eating calls as affective nudges are chosen for this study. These nudge types are chosen to find healthy eating nudges effects on consumers' purchase intention.

It is known that intention is main predictor of future behavior of humans. In this study, purchase intention is investigated, thus only cognitive and affective nudges are used for this research rather than behavioral nudges. In order to find the effect of behavioral nudges, experimental studies are mostly used.

In this thesis, the effects of cognitive and affective healthy eating nudges are investigated by using questionnaire method. The design of healthy eating nudges application contains simplicity. In addition, applied nudges provide freedom of choices to consumers in given alternatives.

1.3.10.2. Nutritional Labeling

Nutritional labeling is used as a cognitive nudge type for this study. Descriptive and evaluative nutritional labeling nudges are evaluated under the title of nutritional labeling. Similar nudges can be combined under the same title (Chandon & Cadario, 2018).

Descriptive nutritional nudge gives the calorie information of food ingredients that can be found on labels of product packages. In addition, restaurant menus can contain such information.

The evaluative labeling nudge is the part of nutritional labeling that forms the basis for consumer interpretation. For example, the product information is indicated by colors. Most common colours are green, yellow and red to provide nutrient levels of products (e.g. green means that the percentage of related ingredient is low). Therefore, consumers can easily make an evaluation of products. Moreover, putting health-related symbols or smiley on product labels can be categorized as a nutritional labeling nudge (Chandon & Cadario, 2018).

When there is an informative label on products, people tend to purchase more (Ge, Behnke and Almanza, 2014; Sunstein, 2014; Chandon & Cadario, 2018; Chance et al., 2014).

1.3.10.3. Hedonic Enhancement

Two affective healthy eating nudges are also chosen for this research application. These are hedonic enhancements and healthy eating calls.

In hedonic enhancement nudge type, the most important thing is focusing on hedonic side of healthy consumption products. Moreover, hedonic nudge tries to increase the interest of consumers in healthy foods. Providing the pleasure of consumers is the main purpose of this nudge. Some hedonic pictures or terms can be effective in taking an attention of consumers and it can be used in product descriptions.

The hedonic consumption term that is used for nudging is the same with the marketing term but when it is used as a nudge; the nudging rules should be taken into account. This nudge focuses on the outcome of hedonic consumption.

1.3.10.4. Healthy Eating Calls

This nudge aims to direct people to make better decisions. When directing people to healthy eating options, the healthy eating signs, pictures or direct sayings can be used as a nudge. These leadings can be written on products. For example,

promoting people by writing “Try this fresh vegetable” or” Make a heart friendly choice for yourself” on products can affect decisions of people. In addition, converting unhealthy eating decisions into healthy decisions can be another version of this nudge. For instance, “Do you want to take half portion of your dinner?” question can be asked to consumers as a “healthy eating calls” nudge (Chandon & Cadario, 2018).

1.3.10.5. Other Healthy Eating Nudges

Other healthy eating nudges, which are shown below, are separately evaluated from applied nudges in this study.

- **Visibility Enhancements;**

It is one of the cognitive nudge types. When people decide to buy a product, they do not evaluate all the product options of related product category. Thus, in order to increase healthy food choices, these foods should be put on visible places in the markets.

According to this nudge, the design of shelves should be arranged in order to show the availability of healthy options. In addition, putting unhealthy options on invisible places on the shelves is another part of this nudge. The menus of restaurants can be designed by using visibility nudge. This strategy aims to increase the probability of healthy food selection.

- **Size Enhancements;**

According to this behavioral nudge type, the important thing is the size. The healthy eating food consumption is directly proportional with the portion size of plates. The consumption rate of foods can be changed due to the plate size; bigger portion means high consumption rate and smaller size means low consumption rate. Moreover, when the portions include more healthy foods, people tend to consume more. In addition, if the portions do not include unhealthy food or the amount of unhealthy foods are decreased, healthy food consumption increases.

- **Convenience Enhancements;**

This behavioral nudge type aims to give healthy foods prominence by making them physically easier to reach. If healthy foods are presented as a default option, this is explained as a convenience nudge. Presenting healthy foods as a slice can increase

the consumption of presented food; for example, sliced apple is consumed more than unsliced apple.

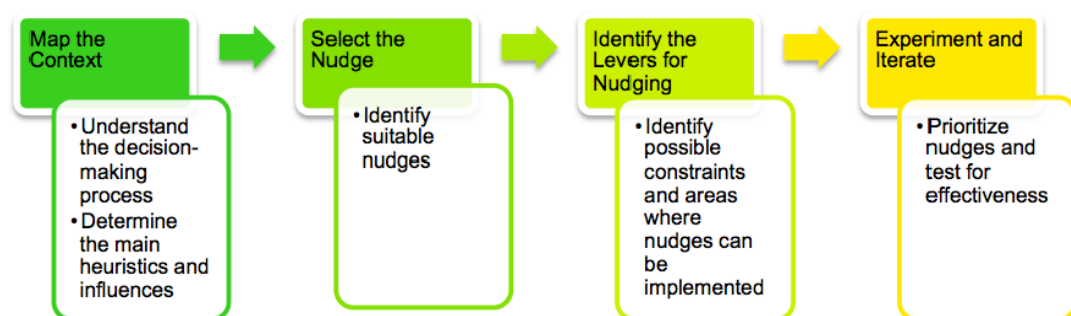
There are several inferences about topic. The first one is about the differences between nudge types. Food choices are affected by behavioral, affective and cognitive nudges. According to the implications of the meta-analysis, behavioral nudge types are more effective on consumers' decisions than affective and cognitive nudges (Cadario and Chandon, 2018).

The latter is related to differences between the effects of healthy and unhealthy food choices. The key point of the previous studies is that there is a difference between the effects of reducing unhealthy options and increasing healthy options. Indeed, nudging people to avoid eating unhealthy food is easier than nudging people to eat healthy food (Cadario & Chandon, 2018).

1.3.11. The Process of Nudge Development

According to Ly, Mažar, Soman and Zhao (2013), four steps are classified for nudge development. Ly et al. mentioned that the process should be designed well in order to develop an effective nudge. The Figure 5 indicates the development process of nudge. The nudge development process is explained by using retirement savings example (Ly et al., 2013). In addition, this process can be also applied to other nudges.

Figure 5: The Process of Nudge Development



Source: Ly, Mažar, Soman and Zhao, 2013:15

1.3.11.1. Map the Context

The first step includes an evaluation of the process of decision-making. In this section, the main effects and heuristics should be determined to start the process. In decision-making process, people sometimes do not act accordingly to their intentions so analyzing the process can explain the factors that prevent people.

While the process is being analyzed, some questions should be asked to the decision maker. These questions consist of four aspects that are sources of informations, characteristics of people's mindset, properties of decisions, social and environmental factors.

- The information source indicates how linked information about decision is collected.
- The questions about properties of decisions try to understand the motivations towards the decision. In addition, how choices are presented to humans is the topic of these question types.
- The characteristics of the people mindset questions try to understand previous attributes and emotions that can affect consequences of decisions.
- The last item of questions can include social factors. For example, asking “Are your decisions affected by your peers’ choices?” is a social factor.

This part includes that the choice architecture tries to affect the consequence of many smaller acts and decisions. In order to design the influence process the whole context should be evaluated. However, practitioners have some challenges in implementing nudge because it is difficult to explain the importance of management of welfare and health to the people. The best moments of nudging people can be the marriage time or when they have a baby. Especially in these life times, they remember the importance of savings and other expenses, thus nudges are more effective in these times (Ly et al., 2013).

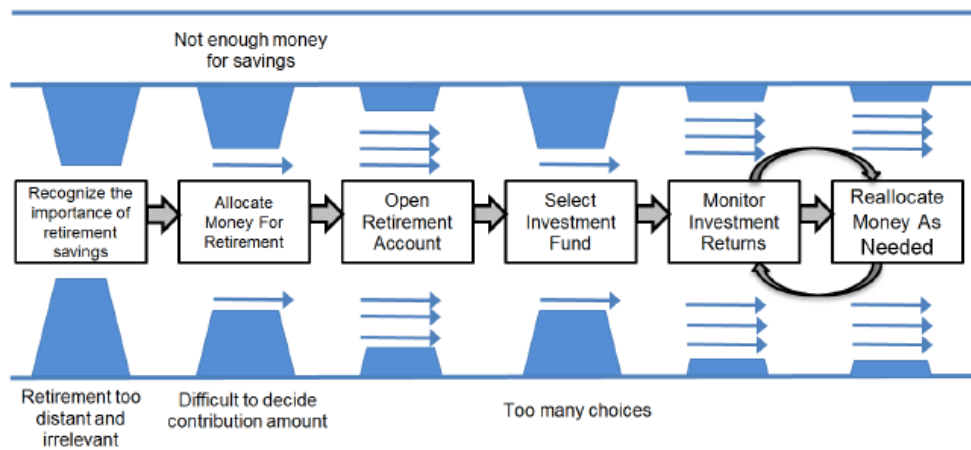
1.3.11.2. Select the Convenient Nudge

The appropriate nudges should be selected according to the situation. In decision-making process, sometimes a bottleneck occurs. If there are bottlenecks in decision-making period, convenient nudges can be applied to these bottlenecks. For instance, deciding the total money for retirement savings and deciding available budget for the retirement savings can be the bottlenecks for employees. If there is no convenient tools for calculation to determine the required budget for the retirement savings, bottleneck occurs.

In addition, in this retirement example, another bottleneck can be the investment options. There can be different investment options for savings. When there are many options, people are not capable of evaluating all given options. Therefore, another bottleneck can occur.

One of the important problems is need recognition as a bottleneck. For example, individuals can think that there are still lots of time for their retirements to take preventive precautions. In addition, people can have some cognitive difficulties in their decision-making processes or they can be confused by many alternatives that can create bottlenecks. The Figure 6 shows the retirement saving decision example.

Figure 6: Retirement Decision Map Contains Bottlenecks



Source: Ly, Mažar, Soman and Zhao, 2013:17

1.3.11.3. Explain the Levers of Nudge

This part aims to accelerate the process of nudges development. Explaining the levers of nudges is crucial for development process. Default effect can be used to speed up the process like suggesting a default choice for retirement saving program. System can be designed so that people can be automatically enrolled to the retirement funds. The decision making process should be designed as simple as possible. Moreover, the costs of nudging can be decreased by using technological benefits. By doing so, the process can be accelerated.

1.3.11.4. Design of Experiment

When nudge process is designed, following issues should be considered,

- Nudges are inherently applicable for combination. The convenient nudges should be implemented to the suitable bottlenecks.
- The effects of nudge types may vary from person to person. For instance, since a person does not want to make an upfront commitment, default effects can reach more people than pre-commitment strategies.
- Nudges should be designed depending on the preferences of target audience. For example, the money that is determined for retirement savings cannot be appropriate for all the people (e.g. monthly €150 for retirement savings can be high for some people, or retirement program terms are not appropriate for the people even the monthly payment is acceptable). Thus, segmentation of target audience is vital for designing a nudge process.
- The other important issue is evaluation of long-term effects of nudges. The evaluation includes whether implemented nudge types create good habits or not.

1.3.12. Nudge and Sludge

Nudges try to lead people to make better choices in their lives. If nudges are not used for a good purpose, they convert into a sludge. In other words, the term “sludge” is used to define nudge that has a bad purpose. Richard Thaler (2018) added the term sludge into the literature.

The companies consider their profits rather than the welfare of consumers. In other words, if companies consider only their benefits when implementing nudge, it means that they use sludge as their strategies. Thaler (2018) gave some examples about sludge.

The companies sometimes offer a refund to consumers. In this circumstance, the process can be designed simple but in some situations, the process can be designed more complex. In a complexity, there can be a bad intention of the company. This bad intention can occur as a sludge. For example, when a company offers a refund to consumers, the process that should be done by consumers can be difficult. Consumers should make more efforts to get their rebate. For instance, consumers should send their bills by mail, they should fill in a form and the barcode number of product can be needed. Many consumers do not want to lose time with this process. Only deception of rebate can increase the sales of the companies. Continuation of this rebate process is interrupted due to the sludge, which is not beneficial for the consumers.

The sludge can be implemented in both public and private sector. In addition to private sector example, Thaler (2018) gave an example of sludge in public sector. In general, the government aims to increase the voter rates. Indeed, the government encourages people in order to increase the voter turnout. However, according to Thaler's sludge case, the voter rates are decreased in Ohio because of the government regulation. The government removes the eligible voters from the list of voters who have not recently voted and have not answered the government postcards (Thaler, 2018).

Therefore, Thaler (2018) mentioned that the sludge could take two important forms. Firstly, it can deter behavior for the benefit of a person such as demanding a rebate or tax discounting. Secondly, sludge can promote self-defeating behavior. Making an investment, which is too good to be true, can be indicated as an example of second sludge form.

1.3.13. The Nudge Theory in the World

Nudging strategies are being used all over the world. The governments use nudges for public health or politics. Soman & Ly (2013) and Sunstein (2014) mentioned that nudge units are established in many countries such as UK and USA.

Kosters and Van Der Heijden (2015) mentioned that UK established behavioral insight team in 2010 for related areas. Also, nudge theory has gained great importance in European Countries such as Germany (Kosters & Heijden, 2015).

Moreover, some international corporations also use nudge units such as OECD (Reisch et al., 2018). Mainly UK, USA and Denmark use nudging strategies in their policies (Soman & Ly, 2013).

CHAPTER TWO

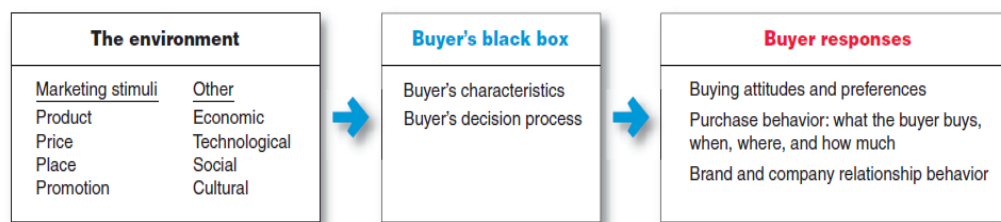
CONSUMER DECISION MAKING BEHAVIOR

In this part of the study, consumer behavior concepts that are relevant to research topic are explained in order to clarify the reasons of nudging effect. Thus, the buying decision behavior types, buyer decision process, bottlenecks in decision process, TRA and TPB are explained.

2.1. CONSUMER BEHAVIOR

The classical buyer behavior model in Figure 7 shows the factors that affect the consumer behavior (Armstrong & Kotler, 2016). According to the model, the customer responses occur after the stimuli are evaluated in their black boxes. The stimuli are involved marketing mix and other factors such as social, economic and cultural effects. The consumers' perceptions and reactions towards the stimuli occur due to their own characteristics. Moreover, the process of consumer buying behavior affects an individual's behaviors. Consequently, the customer responses are shaped by this decision process (Kotler and Armstrong, 2016). In order to evaluate nudge theory, understanding the consumers' decision process is vital.

Figure 7: The Buyer Behavior Model



Source: Kotler and Armstrong, 2016:182

2.1.1. Factors Affecting Consumer Behavior

Armstrong and Kotler (2016) mentioned that many factors can affect consumer behavior. These are classified in four subtitles that are personal factors (age, occupation, personality, economic condition, life style etc.), cultural factors (culture, subculture and social classes), social factors (family, groups, friends, peers and other networks) and psychological factors (perception, beliefs & attitudes, motivation).

2.1.2. The Buying Decision Behavior Types

The human decision making behavior varies due to some factors such as product and brand differences and consumer involvement degree (Figure 8). In this part, types of buying decision are explained. Kotler and Armstrong (2016) classified the consumer buying behavior in four subtitles.

2.1.2.1. Complex Buying Behavior

Complex purchasing behavior occurs when there are significant differences between brands perceived by consumers and consumers are highly involved in buying decision at the same time. If the products are not cheap or they are not frequently purchased by consumers, the complex buying behavior occurs and people are highly involved in buying process. The process starts with a belief towards a product, continues with an attitude, and ends with a purchase decision. Mostly, the expensive products such as cars, laptops, mobile phones and luxury products are in this category.

2.1.2.2. Dissonance Reducing Buying Behavior

When there are few differences among the brand choices and at the same time if the consumers are highly involved in the purchase decision process, dissonance-reducing behavior occurs in buying situation. Because of the product specifications, consumers are highly involved in purchase decisions but there are not too much perceived differences between brands. Thus, this buying behavior occurs relatively faster than a complex buying.

The important point is that consumers can face with a post purchase dissonance due to their final decisions. The dissonance can occur because of hearing good word of mouth about another rival product experiences or being aware of the disadvantages of the product they bought.

2.1.2.3. Habitual Buying Behavior

The Figure 8 shows that consumer habits occur when consumers have low involvement towards a product and there are not significant differences between brands (e.g. purchasing salt).

The purchase behavior of these kinds of products can be classified as habitual buying, instead of classifying as brand loyalty. In this type of buying behavior, consumers do not act according to certain behavioral sequence of belief, attitude and behavior. Actually, consumers do not evaluate all brand choices when consumers have low involvement in decision process. They do not search all possible brand alternatives due to low involvement decision type.

2.1.2.4. Variety Seeking Buying Behavior

Consumers seek variety in their buying behavior when there are significant differences between brands perceived by consumers and consumers have little involvement in buying decision at the same time.

Most of the brand switching takes place in this case. For instance, a consumer can buy one of the biscuit brands without evaluating all possible choices; he or she has only chance to make evaluation during their consumption. Therefore, the next purchase decision can change. In other words, the consumer may want to try another brand.

Figure 8: Consumer Purchasing Behavior Types

	High involvement	Low involvement
Significant differences between brands	Complex buying behavior	Variety-seeking buying behavior
Few differences between brands	Dissonance-reducing buying behavior	Habitual buying behavior

Source: Kotler and Armstrong, 2016:182

2.1.3. The Consumer Decision Process

The classical consumer purchasing behavior includes five steps. The Figure 9 shows these steps respectively. In order to find the effects of nudging on consumer purchase intention, basics of consumer behavior should be explained. In this part, the process is clarified.

Figure 9: The Decision Making Process of Buyer



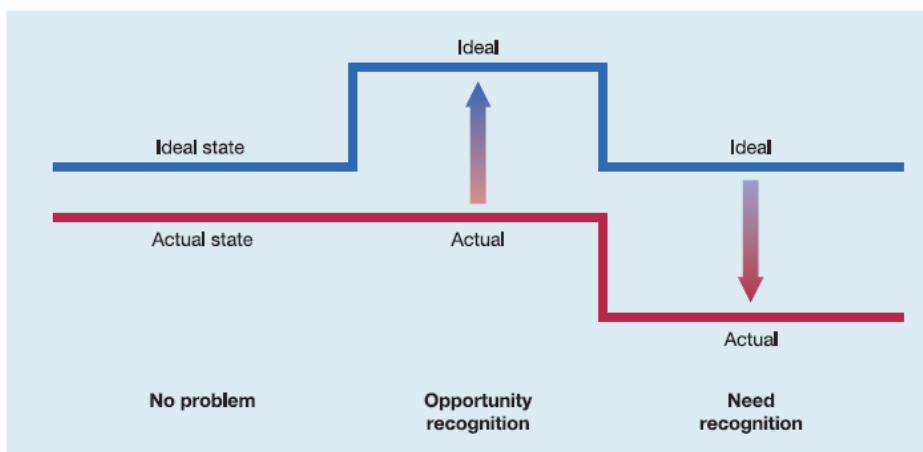
Source: Kotler and Armstrong, 2016: 183

2.1.3.1. Need Recognition

Everything starts with consumer needs. Consumers can be affected by external or internal stimuli. For example, being a thirsty or hungry can be internal influences. Advertisements or other marketing activities, which can be used as external stimulus, can trigger different needs. For instance, new product launch of most known cell phone brand can create a need for a new cell phone.

When there is a difference between individual's current position and ideal position, two types of problems can occur; these are need recognition and opportunity recognition (Figure 10). If an individual's actual position quality decreases, his or her need recognition occurs. Moreover, if the ideal situation gets better than actual stage, again gap occurs between actual and ideal stages, so opportunity occurs (Solomon, 2006).

Figure 10: Problem Recognition



Source: Solomon et al., 2006:264

2.1.3.2. Information Search

The second part is information search that is crucial for the consumers. Consumers can collect information from different sources. For instance, people can gather information from their families, neighbors, colleagues and friends or they can use public sources such as mass media (newspaper and social media).

The user experiences are one of the most important information resources for consumers. Indeed, the product recommendations of trustworthy people have a big impact on consumers' decisions. Thus, word of mouth is more effective on consumer decisions rather than other information sources.

People do not always search the information rationally due to biases in decision-making process.

- **Types of Perceived Risks**

Consumers can face with different kinds of risks in their purchasing decision process. When consumers buy a new product or they benefit from some services, perceived risks can occur due to uncertainty. The perceived risk contains five important risks that are psychological, monetary, social, functional and physical risks. In addition, consumers can have a time risk in their purchasing activity. The perceived risk can occur in any purchase decision, especially in buying costly products such as houses.

In every purchase decision, the most common risk is **financial risk** but it is especially important for the low-income level consumers. Buying high priced products inevitably includes monetary risks.

Social risks can influence the people who have low self-esteem and low self-confidence more than others do. The more visible products have social risks such as clothes, cars and cell phones.

The **functional risk** is another risk type in buying decision, there is always a possibility that the function of the purchased product does not meet the expectations of consumers. For example, if a consumer buys a new coffee machine, functional risk, such as malfunction of any parts of the machine, can occur.

The **physical risk** includes health safety risks. For instance, especially old consumers can be injured by some mechanical products.

Consumers can encounter with **psychological risk** in their decision process. Indeed, some products can affect individuals mentally, e.g. purchasing luxury products may cause guilt feelings.

Time consumption is also another issue in buying decision-making process. According to types of purchasing decision behavior, time consumption varies. Moreover, if the purchased product is not good enough, it can cause the opportunity cost of finding a new convenient product and it creates **time risk**.

2.1.3.3. Evaluation of Alternatives

Evaluation stage of options requires much more effort than other stages due to availability of many different alternatives. In this stage, alternative product options are evaluated by consumers based on different product properties. For instance, consumers are interested in quality, price and performance of products.

When consumers make a purchase decision, they may have different criteria in their minds. Firstly, consumers identify the alternative products in the market. In decision-making procedure, consumers always consider their evoked set that indicates the products that already in their minds. The evoked set helps consumers to identify the alternative options but it can be a limited source for evaluation.

Moreover, according to decision-making process type, the evaluation of alternatives stage differs. For example, in complex buying behavior, a consumer may evaluate many brands carefully. However, a consumer who makes habitual decision may not evaluate all alternatives. Moreover, the degree of product involvement is one of the factors that affect the evaluation procedure. If involvement degree is high, the evaluation process contains more effort rather than low involvement process.

After identifying the product options, consumers categorize products in their minds by comparing them with each other.

2.1.3.4. Purchase Decision

After all these steps, a purchase decision occurs. In this stage, the most appropriate alternative is chosen by consumers. One of the most important issues is purchase intention because intention is accepted as a main predictor of future purchase decision of an individual. In general, consumers' purchase intention is affected by income level of consumers and the price of products.

The purchase decision of preferred product can be affected by some factors. Attitude is the first factor and the unexpected situation is the second factor. The unexpected positions can occur due to competitors' new marketing strategy. For instance, competitors can discount the price of their products. In addition, economic downturns or any recommendation of consumers' close friends can directly change the purchase decision.

2.1.3.5. Post-purchase Behavior

This stage is important for the marketers in order to provide customer retention. After purchase decision, consumers can be satisfied or dissatisfied with their demands. If the performance of purchased product does not meet the expectations of consumers, they are not satisfied with their purchase decision and it creates a problem. If the product performance is better than expected, consumers are pleased. Therefore, when consumers are happy with their final decisions, it causes a brand loyalty. The companies' main aim is to create a loyalty for their brands. Post purchase decision includes positive or negative feedbacks, companies should evaluate these feedbacks in order to provide a good service for consumers because consumer satisfaction is the key in order to create competitive advantage in the markets.

Managing the post-purchase decision is important for value creation. For example, cognitive dissonance can occur after buying a new product, which means that consumers have conflicts due to their purchase decisions. Consumers can question themselves about their decisions and they can consider the opportunity cost of other alternatives. Another example is that the bad word of mouth can create a bad perception in consumers' minds. Therefore, the company reputation can be destroyed

if consumers are dissatisfied. Thus, this process should be managed well by marketers in order to solve consumer problems.

2.1.4. The Bottlenecks in Decision Making Process

The final decisions of consumers are affected by some factors called bottlenecks. Heuristics and several behavioral influences can cause bottlenecks in consumer decision-making processes. In the first chapter of this study, the explanations of these concepts are given in details. The behavioral economics concepts that are given in Figure 11 are directly related to consumer behavior (Reisch & Zhao, 2017).



Figure 11: The Bottlenecks in Decision Making Process

BEHAVIOURAL INFLUENCES	
Status Quo	An individual's preference to maintain their current state even if a change in their circumstances would provide better options.
Endowment Effect	The inclination to value and pay more for an item that is already in possession than for an item that has yet to be attained.
Loss Aversion	A tendency of individuals to be more attuned to losses than to gains.
Confirmation Bias	A predisposition to accepting information that confirms one's opinions or conclusions rather than information that is contradictory.
Mental Accounting	Money is mentally allocated to several "accounts" such as clothing or entertainment rather than being perceived as fungible.
Willpower	The fact that individuals only have a certain amount of willpower at any given time and that willpower needs to be replenished periodically.
Hyperbolic Discounting	To value benefits that are reaped now more than benefits reaped in the future. Consequently, costs that are paid in the future are not felt as deeply as costs that are paid now.
Choice Overload	The presence of too many choices for a particular decision, making it difficult to evaluate and decide.
Information Overload	The presence of too much information in the environment, preventing the individual from evaluating and making a good decision.
HEURISTICS	
Availability Bias	Information that readily comes to mind is used to make a decision rather than using a comprehensive set of facts that evaluates all options.
Representativeness	The use of similar attributes to judge the likelihood of an event occurring. This is in contrast to using a more comprehensive approach that would utilize statistics (e.g., base rates) to determine likelihood.
Anchoring and Adjustment	To make an estimate by applying adjustments to a particular reference value (i.e., the "anchor").
Social Proof	When an individual looks to the behaviour of their peers to inform their decision-making, and their tendency to conform to the same behaviour their peers are engaged in.

Source: Ly, Mažar, Soman and Zhao, 2013:18,19

2.1.5. The Theory of Reasoned Action

The theory of reasoned action (TRA) model was developed based on persuasion models in social psychology. Ajzen and Fishbein (1975) developed the theory in order to clarify human behaviors. This model indicates the relationship between attitudes, norms, behavioral intentions and behaviors of humans.

Theory of Reasoned Action (TRA) tries to explain human behaviors based on individuals' pre-existing norms, attitudes and behavioral intentions. The theory indicates that pre-existing attitudes and subjective norms can cause behavioral intentions.

- **Subjective Norm**

Ajzen (1991) defined subjective norm as a kind of perceived social pressure on individuals' behaviors. In addition, normative beliefs provide a basis for subjective norms. "Motivation to comply" also plays an important role in order to determine an individual's subjective norms. Individuals are mostly affected from the perceptions of their peers, families or friends when he or she performs any behavior.

- **Attitude**

Another important factor is attitude that affects behavioral intention. Two factors affect attitudes towards behavior. These factors are the evaluation of potential consequences and behavioral beliefs regarding the probability of actual behavior. If the consequence of any event is desirable, an individual has positive attitude towards the related behavior. Motivations of humans to perform their behaviors are related to their behavioral beliefs.

Another issue is evaluation of the consequences of behaviors like smoking cessation. As a positive belief, an individual can think that quit smoking is good for her or his health, as a negative belief she or he can think that this action cause nervous feelings due to the smoke deprivation.

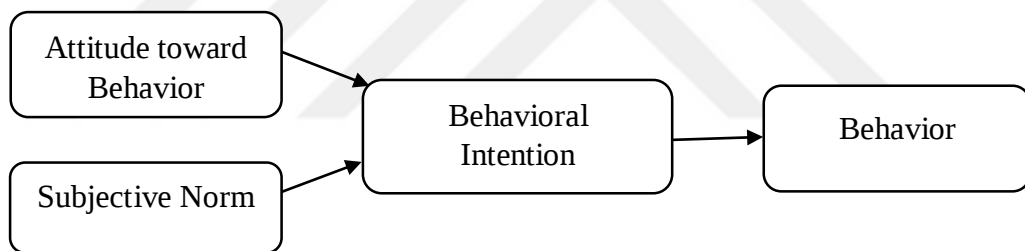
- **Behavioral Intention**

According to this theory, an individual's intention to behave is principal predictor of their real actions. Therefore, in order to forecast the actual behaviors, evaluation of behavioral intentions is crucial.

TRA is used as a framework in many fields such as health behavior and consumer behavior to investigate the specific human behaviors. In order to measure and understand nudging effects on consumers' purchase intention, the theory of reasoned action is used in this study.

In addition, the actual behaviors of consumers are not evaluated in this thesis because only cognitive and affective nudges are evaluated instead of behavioral nudge. Moreover, this study focuses on behavioral intention of people because the research topic is about purchase intention.

Figure 12: The Theory of Reasoned Action



Source: Adapted from Ajzen and Fishbein, 1975

2.1.6. The Theory of Planned Behaviour

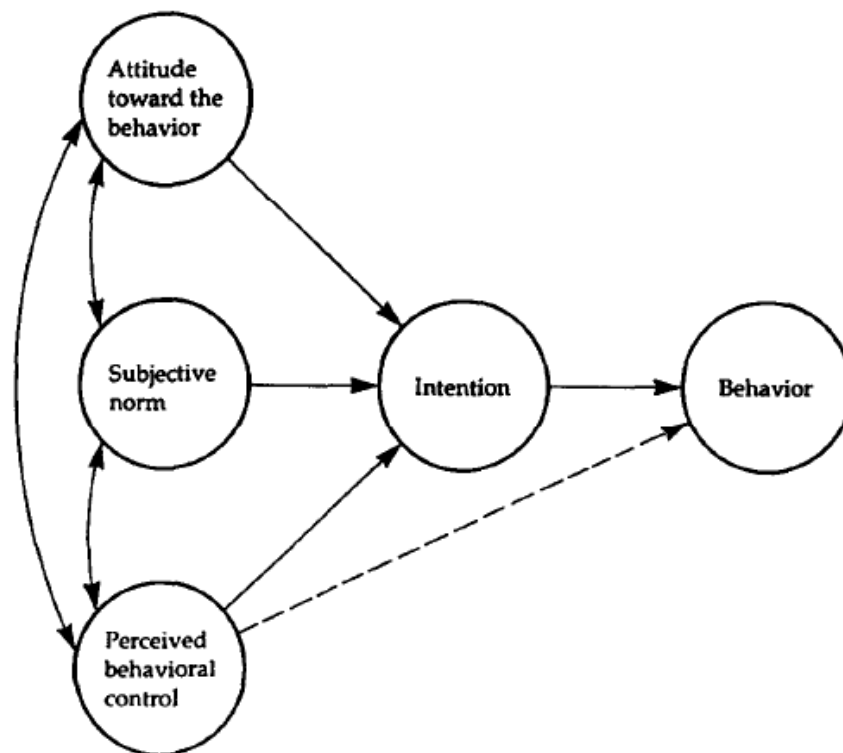
Fishbein and Ajzen (1985, 1991) defined the theory of planned (TPB) behavior as an extended version of TRA. Two models have attitudes and subjective norm components; the perceived behavioral control was added into the TPB model in order to increase forecasting ability of TRA. According to this expanded theory, individuals have more intention to perform behavior if they believe that the probability of occurrence of achievement is high. The model indicates that behaviors can be directly affected by intention and perceived behavioral control (Ajzen, 1991).

- **The Perceived Behavioral Control**

The model of TPB is almost the same as TRA. Unlike theory of reasoned action, theory of planned behavior includes perceived behavioral control. This term refers to an individual's perception about the related behavior in terms of difficulty or ease. Additionally, it consists of two components; the control beliefs and self-efficacy. The control beliefs form a basis of perceived behavioral control.

The explanatory power of the model increases by adding control of perceived behavior. The Figure 13 that is shown below indicates the expanded model.

Figure 13: The Theory of Planned Behavior



Source: Ajzen and Fishbein, 1991:182

CHAPTER THREE

RESEARCH METHODOLOGY

In this part of the study, the effects of nudge theory on consumer purchase intention are investigated through a quantitative research method.

3.1. METHODOLOGY

3.1.1. Purpose and Importance of the Study

In this research, the aim is to determine the effects of nudge theory on consumer purchase intention of healthy consumption products. Moreover, the reasons why consumers' purchase intentions are affected by nudging are searched.

The chosen product is chocolate for this study (Truffle chocolate → high involvement product, Tablet chocolate → low involvement product). Since this research includes healthy eating nudges and product involvement level is investigated, chocolate is selected as a research product.

The theory of nudge has gained great importance in recent years due to its explanatory power on individuals' decision-making processes. The nudge theory aims to lead individuals to make better choices, thus an application of nudge theory is implemented in order to contribute to consumer decision-making behavior.

3.1.2. The Research Questions

The main question is,

Q₁: "How does the nudge theory affect consumer purchase intention of healthy chocolate?"

In order to determine the related factors that affect nudge, following research question is investigated,

Q₂: "What are the factors that influence the effectiveness of nudging consumer purchase intention of healthy chocolate?"

3.1.3. Variables of Research

In this part, variables of this study are given and conceptualized. The conceptual definitions of variables are indicated below.

- **Independent Variables**

Health Consciousness: In order to measure healthy eating nudge types, one of the most crucial values is health consciousness. Health consciousness, which is similar to attitude, measures the human awareness about health issues and healthiness of an individual's lifestyle and nutritional habits. Individuals' health consciousness levels directly determine how she or he reacts to health related data (Schwartz, 2017; Dutta-Bergman 2004).

Subjective Norm: The norms are the set of rules and some expectations that are accepted by a society and they lead the behaviors of the society members. According to Ajzen (1991), subjective norms are kind of perceived social pressures on individuals' behaviors. The social influence is crucial on individuals' decision-making processes. An individual is mostly affected from the perceptions of his or her peers, families or friends when he or she performs any behavior.

Attitude: Attitude is a way an individual thinks and feels about something. An attitude is a tendency to react towards a certain stimuli such as an idea, a situation, an individual or an object. Attitudes can be classified as positive, neutral or negative attitudes regarding a particular behavior. The psychological factors such as values, beliefs, ideas and perceptions determine the attitude of an individual.

The attitudes are effective on consumer decision-making procedure. According to Ajzen and Fishbein's TRA (1975), one of the important factors is attitude that affects behavioral intention. In this research, attitude is used as an independent variable in order to measure purchase intention.

Degree of Liking Behavior: This self-reported behavior is explained as a report of an individual's behavior that is related to the research topic. Self-reported behavior provides details about an individual's himself or herself in any topic. In this research, the term is used to measure the degree of liking behavior of healthy chocolate.

Perceived Availability: It defines the accessibility of product that is perceived by consumers (Sundqvist & Tarkiainen, 2005).

- **Dependent Variable**

Purchase Intention: It is a plan of consumers to buy certain products or services in the future, which can be also defined as a potential purchase decision of customers.

In this study, purchase intention variable is measured twice. The first measurement is conducted without using one of the related nudge types. The second measurement of purchase intention is conducted by considering related nudge type.

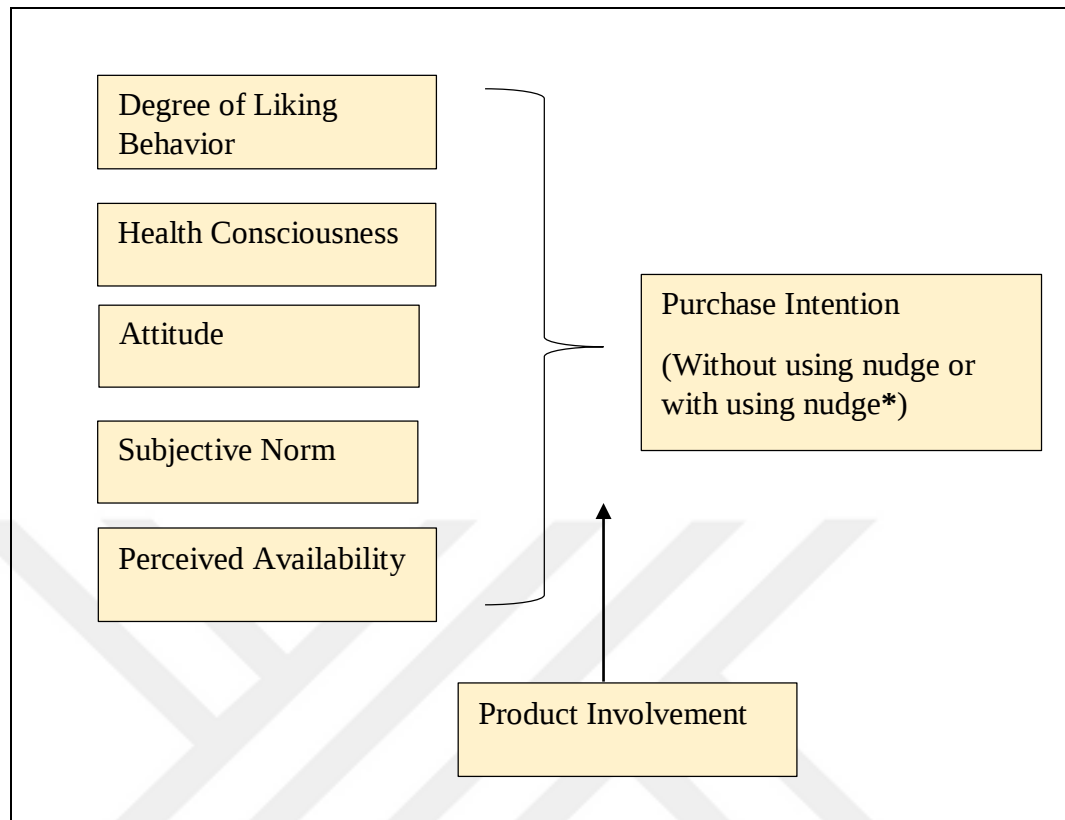
- **Moderating Variable**

Product Involvement: It is linked to the consumers' levels of interest in a certain product and is classified into two groups as high involvement and low involvement (Solomon, 2006).

3.1.4. Research Model

In this study, the main aim is to measure the effects of nudge theory on consumers' purchase intention of healthy consumption product. The following research model is implemented in order to measure the nudge theory effect. The purchase intention item is measured for two conditions with and without using nudge. In this study, nudge types are titled as nutritional labeling, hedonic enhancements and healthy eating calls (Cadario and Chandon, 2018; Reisch, Sunstein, Rauber, 2017).

Figure 14: Research Model of the Study



***Nudge Types refer to Nudge 1: Nutritional labeling, Nudge 2: Hedonic enhancements or Nudge 3: Healthy eating calls**

3.1.5. Hypotheses

Mainly six hypotheses are investigated in this study as indicated in Table 1 and Table 2. The hypotheses are adapted to the related healthy eating nudge types (Nudge 1: Nutritional labeling, Nudge 2: Hedonic enhancements, Nudge 3: Healthy eating calls). The main hypothesis of this study is to try to test whether nudge is effective on purchase intention or not. The other hypotheses are related to understanding the underlying reasons of nudging purchase intention of healthy consumption product.

Additionally three hypotheses are tested to compare findings of high and low involvement product results (Table 3).

Table 1: Hypotheses of High Involvement Product

HIGH INVOLVEMENT PRODUCT
Nudge 1: Nutritional Labeling H₁: “Nutritional labeling” type of nudge positively affects consumers’ purchase intention of truffle chocolate. • H_{1a}: Consumers’ degree of liking behavior positively affects their purchase intention of truffle chocolate by using “Nutritional labeling” type of nudge. • H_{1b}: Consumers’ health consciousness level positively affects their purchase intention of truffle chocolate by using “Nutritional labeling” type of nudge. • H_{1c}: Consumers’ attitudes towards healthy eating positively affect their purchase intention of truffle chocolate by using “Nutritional labeling” type of nudge. • H_{1d}: Consumers’ subjective norms positively affect their purchase intention of truffle chocolate by using “Nutritional labeling” type of nudge. • H_{1e}: Consumers’ perceived availability positively affects their purchase intention of truffle chocolate by using “Nutritional labeling” type of nudge.
Nudge 2: Hedonic Enhancements H₂: “Hedonic enhancements” type of nudge positively affects consumers’ purchase intention of truffle chocolate. • H_{2a}: Consumers’ degree of liking behavior positively affects their purchase intention of truffle chocolate by using “Hedonic enhancements” type of nudge. • H_{2b}: Consumers’ health consciousness level positively affects their purchase intention of truffle chocolate by using “Hedonic enhancements” type of nudge. • H_{2c}: Consumers’ attitudes towards healthy eating positively affect their purchase intention of truffle chocolate by using “Hedonic enhancements” type of nudge. • H_{2d}: Consumers’ subjective norms positively affect their purchase intention of truffle chocolate by using “Hedonic enhancements” type of nudge.

• H_{2e}: Consumers' perceived availability positively affects their purchase intention of truffle chocolate by using "Hedonic enhancements" type of nudge.
Nudge 3: Healthy Eating Calls H₃: "Healthy eating calls" type of nudge positively affects consumers' purchase intention of truffle chocolate.
• H_{3a}: Consumers' degree of liking behavior positively affects their purchase intention of truffle chocolate by using "Healthy eating calls" type of nudge.
• H_{3b}: Consumers' health consciousness level positively affects their purchase intention of truffle chocolate by using "Healthy eating calls" type of nudge.
• H_{3c}: Consumers' attitudes towards healthy eating positively affect their purchase intention of truffle chocolate by using "Healthy eating calls" type of nudge.
• H_{3d}: Consumers' subjective norms positively affect their purchase intention of truffle chocolate by using "Healthy eating calls" type of nudge.
• H_{3e}: Consumers' perceived availability positively affects their purchase intention of truffle chocolate by using "Healthy eating calls" type of nudge.

Table 2: Hypotheses of Low Involvement Product

LOW INVOLVEMENT PRODUCT
Nudge 1: Nutritional Labeling H₄: "Nutritional labeling" type of nudge positively affects consumers' purchase intention of tablet chocolate.
• H_{4a}: Consumers' degree of liking behavior positively affects their purchase intention of tablet chocolate by using "Nutritional labeling" type of nudge.
• H_{4b}: Consumers' health consciousness level positively affects their purchase intention of tablet chocolate by using "Nutritional labeling" type of nudge.

• H_{4c}: Consumers' attitudes towards healthy eating positively affect their purchase intention of tablet chocolate by using "Nutritional labeling" type of nudge.
• H_{4d}: Consumers' subjective norms positively affect their purchase intention of tablet chocolate by using "Nutritional labeling" type of nudge.
• H_{4e}: Consumers' perceived availability positively affects their purchase intention of tablet chocolate by using "Nutritional labeling" type of nudge
Nudge 2: Hedonic Enhancements H₅: "Hedonic enhancements" type of nudge positively affects consumers' purchase intention of tablet chocolate.
• H_{5a}: Consumers' degree of liking behavior positively affects their purchase intention of tablet chocolate by using "Hedonic enhancements" type of nudge.
• H_{5b}: Consumers' health consciousness level positively affects their purchase intention of tablet chocolate by using "Hedonic enhancements" type of nudge.
• H_{5c}: Consumers' attitudes towards healthy eating positively affect their purchase intention of tablet chocolate by using "Hedonic enhancements" type of nudge.
• H_{5d}: Consumers' subjective norms positively affect their purchase intention of tablet chocolate by using "Hedonic enhancements" type of nudge.
• H_{5e}: Consumers' perceived availability positively affects their purchase intention of tablet chocolate by using "Hedonic enhancements" type of nudge.
Nudge 3: Healthy Eating Calls H₆: "Healthy eating calls" type of nudge positively affects consumers' purchase intention of tablet chocolate.
• H_{6a}: Consumers' degree of liking behavior positively affects their purchase intention of tablet chocolate by using "Healthy eating calls" type of nudge.
• H_{6b}: Consumers' health consciousness level positively affects their purchase intention of tablet chocolate by using "Healthy eating calls" type of nudge.

- **H_{6c}:** Consumers' attitudes towards healthy eating positively affect their purchase intention of tablet chocolate by using "Healthy eating calls" type of nudge.
- **H_{6d}:** Consumers' subjective norms positively affect their purchase intention of tablet chocolate by using "Healthy eating calls" type of nudge.
- **H_{6e}:** Consumers' perceived availability positively affects their purchase intention of tablet chocolate by using "Healthy eating calls" type of nudge.

Table 3: Comparison Hypotheses of Product Involvement Level

Other Hypotheses
H₇: The product involvement level moderates the effects of nutritional labeling type of nudge for nudging purchase intention of healthy chocolate.
H₈: The product involvement level moderates the effects of hedonic enhancement type of nudge for nudging purchase intention of healthy chocolate.
H₉: The product involvement level moderates the effects of healthy eating calls type of nudge for nudging purchase intention of healthy chocolate.

3.1.6. Questionnaire Design

The questionnaire has three steps. The first part of the questionnaires includes demographics that contain gender, age, income level, education level and consumption habits of respondents. The questionnaire is followed by items measuring purchase intention, subjective norm, attitude, health consciousness, degree of liking behavior and perceived availability.

The second part of the questionnaire is designed in order to search main reasons why consumers are affected by the nudge theory.

The third part measures the effects of nudge theory on consumers' purchase intention. In this stage, firstly control group question is asked to the sample, after that nudging purchase intention question is asked. Before answering the second purchase intention question, respondents did a crossword; the main aim is distracting attention

of respondents in order to measure the nudging effect (Many respondents cannot realize the difference between Scenario 1 and Scenario 2 due to focusing on the crossword).

Moreover, three different healthy eating nudge types are used in this study. These are nutritional labeling, hedonic enhancements and healthy eating calls (Cadario and Chandon, 2018; Reisch, Sunstein, Rauber, 2017). Furthermore, product involvement level (high & low) is included in this study. In order to measure the nudge effect, six different questionnaires are applied to six different samples. Table 4 shows this research idea.

Table 4: Implemented Nudge Types for the Research

Product Involvement	Intervention Types of Nudge	Nudge Types	Questionnaire Number
High Involvement Product	Cognitive	Nutritional labeling (Nudge 1)	Q ₁
	Affective	Hedonic enhancements (Nudge 2)	Q ₂
	Affective	Healthy eating calls (Nudge 3)	Q ₃
Low Involvement Product	Cognitive	Nutritional labeling (Nudge 1)	Q ₄
	Affective	Hedonic enhancements (Nudge 2)	Q ₅
	Affective	Healthy eating calls (Nudge 3)	Q ₆

In the second part, the reasons behind why consumers' purchase intentions are affected by nudging are examined. In this perspective, related scale about the topic is designed and the first eight items of Table 6 are applied to the sample to find these reasons.

In social sciences, many different kinds of reasons such as consumer values, cultures, attitudes and beliefs can affect the behaviors of consumers. In this study, subjective norm, attitude, health consciousness, perceived availability and degree of liking behavior items are used.

The purpose of this study is to determine the effect of healthy eating nudges on consumers' purchase intention, thus the scales about healthy nutrition are investigated. According to the results of previous studies in this field, the health consciousness level is effective on consumers' healthy eating decisions (Schwartz, 2017). Thus, health consciousness is used as a variable.

Mostly, multiple items are preferred in order to measure variables. Thus, health consciousness level is measured by using four items; other variables are measured by using single item, due to the previous researches results. The previous studies have shown that the effect size of the results do not change when single item or multiple items of concrete cases, such as attitude and purchase intention, are used (Ang & Eisend, 2018; Alexandrov, 2010).

According to the investigations, four health consciousness items are modified by evaluating the related scales in the literature (Dutta-Bergman 2004; Tarkiainen & Sundqvist, 2005; Squires et al., 2001). These items are "I always check the ingredients of products to make a healthy chocolate choice", "I choose food carefully to ensure my health", "I think of myself as a health-conscious consumer" "I often think about health issues". Moreover, degree of liking behavior item "I like eating healthy chocolate" is modified for this study.

In addition, theory of reasoned action is also used to determine the reasons why consumers' purchase intentions are affected by nudge. Since attitudes and norms can be used to understand people's intentions, theory of reasoned action is used for this study. Moreover, TRA is used in previous organic food consumption studies to find the factors that affect purchase intention (Sundqvist et al., 2005; İlter & Yılmaz, 2017).

Thus, subjective norm and attitude items are used. Subjective norm item "People, who are important to me, think that I should buy a healthy chocolate" and

attitude item “I think that buying a healthy chocolate is reasonable” are adapted from Fishbein & Ajzen (1991).

Furthermore, perceived availability item “Healthy chocolates are always sufficiently accessible” is modified from Sundqvist & Tarkiainen (2005). All items are given in Table 6.

The third part of this questionnaire contains purchase intention questions. The questionnaire indicates that purchase intention item is measured twice. The purchase intention question is designed by considering whether nudge is applied or not. The first measurement is determined without using one of the related nudge types. The second measurement of purchase intention is determined by using related nudge type. In other words, the first measurement of purchase intention question is designed as a control group. The second measurement of purchase intention includes nudging effect that occurs by using one of the healthy eating nudges. Purchase intention item “I have an intention to buy this product in the near future” is modified from Sundqvist & Tarkiainen (2005).

Table 7 indicates applied scenarios that are designed for this study. In addition, differences and similarities of the scenarios of tablet chocolate and truffle chocolate are given in details. Moreover, *ceteris paribus* conditions are provided to measure nudging effect. When the scenarios of health eating nudges are designed, previous studies in the literature are taken into consideration (Thaler & Sunstein, 2008; Sunstein, 2014; Chandon & Cadario, 2018; Soman & Ly, 2013; Caldwell, 2018; Collins et al., 2016).

The items are measured by using five point Likert-type scale, indicating values are represented as 1: Strongly Disagree, 2: Disagree, 3: Neither Agree nor Disagree, 4: Agree and 5: Strongly Agree.

- **Creating a Ceteris Paribus Condition**

The study includes six different questionnaires, three different nudge types and product involvement level. To measure the nudge effect, other conditions should be in ceteris paribus condition.

- In each survey, both images of two purchase intention questions are the same (the size and figure). The only difference is the second purchase intention question. It includes related nudge type, and thus the image contains the nudge sentence (The image of low involvement product and the image of high involvement product are different).
- In both condition, (high and low involvement conditions) sentences of three healthy eating nudges are the same.
- The Scenario 1 of tablet chocolate is same in all low involvement surveys and the Scenario 1 of truffle chocolate is same in all high involvement surveys.
- The study does not include the price of the products (There is no price in the questionnaires but it can be perceived that the high involvement product is expensive than low involvement product due to the Scenario 1).

Before starting data collection, firstly, the pilot test of survey is implemented to design appropriate and clear questionnaires for the research topic. According to pilot test results, the suitability of wording is controlled and required changes are implemented. The pilot test results show that the questionnaires are convenient to measure the nudging effect on consumer decision-making process.

Ratchford's (1987) and Vaughn's (1986) scale is implemented to respondents in order to understand whether high involvement product and low involvement product are correctly perceived by respondents or not. Three statements are asked to the respondents for each product by using seven-point semantic differential scale. For example, the questions that are asked for truffle chocolate are shown below. In addition, the same questions are asked for tablet chocolate.

1) Generally, purchase decision of truffle chocolate is 1=unimportant decision, 7=important decision

2) Generally, purchase decision of truffle chocolate 1=requires a short time to think on decision, 7= requires a long time to think on decision.

3) Generally, wrong purchase decision of truffle chocolate 1=causes little loss, 7=causes big loss.

Totally, 25 respondents attended to this survey. The mean value of three questions is calculated for each product and one-way ANOVA analysis is implemented for manipulation check (Table 5).

The results indicate that truffle chocolate is perceived as a high involvement product relatively than a tablet chocolate.

Table 5 : Manipulation Check of Product Involvement Level

Product	μ	p-value
Truffle Chocolate	5.80	.000*
Tablet Chocolate	2.64	

- **Construct Measurement**

Table 6: The Items

Number of Items	ITEMS	
1.	I like eating healthy chocolate.	(Degree of liking behavior)
2.	I always check the ingredients of products to make a healthy chocolate choice.	(Health consciousness 1)
3.	I choose food carefully to ensure my health.	(Health consciousness 2)
4.	I think of myself as a health-conscious consumer.	(Health consciousness 3)
5.	I often think about health issues.	(Health consciousness 4)
6.	I think that buying a healthy chocolate is reasonable.	(Attitude)
7.	People, who are important to me, think that I should buy a healthy chocolate. (Family, friends etc.)	(Subjective norm)
8.	Healthy chocolates are always sufficiently accessible.	(Perceived Availability)
9.	I have an intention to buy this product in the near future. (Control group, without nudge)	(Purchase intention) This question is asked to the respondents twice. The first one is a control group question. The second one is asked to measure the purchase intention by using nudging (experiment question). Before and after situation is measured by using purchase intention variable in two different conditions.
10.	I have an intention to buy this product in the near future. (With Nudge)	

There are two scenarios in one questionnaire that are designed for this research based on previous nudge studies (Thaler & Sunstein, 2008; Ly, Mažar, Soman & Zhao, 2013; Cadario & Chandon, 2018) as it is previously mentioned. Table 7 shows these types of nudge scenarios.

- **Purchase Intention Questions Design**

Table 7: Scenario Table

		High Involvement Product (Truffle Chocolate)	Low Involvement Product (Tablet Chocolate)
Scenario 1 (Without Nudge)		The X brand truffle chocolate that you see on the image has a deep-rooted history. It is an international brand and is highly liked by consumers. This X brand of chocolate has a milk, bitter and white chocolate options.	The X brand tablet chocolate that you see on the image is an ordinary chocolate and is highly liked by consumers. This X brand of chocolate has a milk, bitter and white chocolate options.
Scenario 2 (With Nudge)		The same sentence in Scenario 1 is used (High involvement product) + One of the nudge types is added.	The same sentence in Scenario 1 is used (Low involvement product) + One of the nudge types is added.
Nudge Types	1. Nudge (Nutritional Labeling)	This chocolate is produced by using healthy and 100% organic food stuffs.	
	2. Nudge (Hedonic Enhancement)	Treat yourself to a unique, magnificent, at the same time healthy and heart friendly truffle/chocolate!	
	3. Nudge (Healthy Eating Calls)	This chocolate is indicated as a heart-friendly chocolate by the Heart-Health Protection Foundation.	

3.1.7. Chocolate as a Research Product

Many factors such as product price, quality and brand can affect consumer purchase decision. In addition, income level, age, gender, social factors, cultural factors, occupations and lifestyle of consumers also affect decision-making process.

In order to measure nudging effect on consumer purchase intentions there are some reasons to choose chocolate as a research product. The research includes “healthy eating nudges” so the product must be food to investigate the theory. Moreover, product involvement level is used as a variable for this study. In order to measure the level of involvement, the most suitable consumption products are evaluated to find the best possibilities. The technological products like computers, cell phones are evaluated as high involvement products or purchasing a house is a high involvement decision for individuals. In this kind of decisions, consumers need more time and effort to make better decisions. In addition, high involvement products are also expensive. Buying process of these kind of products is more risky than buying low involvement products. According to the requirements of this research, in order to provide *ceteris paribus* condition, the product of low involvement case and high involvement case should be in the same category and high involvement product should be relatively high involvement when it is compared with low involvement product.

According to these evaluations, chocolate is chosen as a consumption product. Furthermore, younger adults are chosen as a sample. Thus, product type should be convenient for them. Several factors such as brand, price, type of chocolate (dark, milk and white chocolates) and package design can affect consumers’ chocolate choices. This study does not include these factors. Only nudge theory application is implemented without changing other things about product in order to measure nudging effect (Creating a *ceteris paribus* condition).

3.1.8. Sampling Design

Dokuz Eylül University Faculty of Business students who are in the departments of Business Administration, Economics, International Relations, International Business and Trade and Tourism Management participated in this

research. The total sample size of this research is 461 respondents. The convenience sampling method is used in this research.

3.1.9. Data Collection Method

The data for the research is collected by using six different questionnaires. The cross-sectional (one shot) study is applied to the sample. The questionnaires were applied to the respondents in both hard copy and soft copy formats. The questionnaires were printout colored due to the specialties of the research topic. The hard copies were distributed to the participants in classrooms. Thus, respondents completed surveys in convenient and controlled place. Different lectures were chosen for an application of questionnaires. In addition, Google Forms tool was used in order to create soft copies. The respondents cannot quit the soft copies before answering the entire questions due to the design of surveys. Thus, all questions were answered in soft copies.

The soft copies were sent to respondents' Debis addresses (Debis is the name of private information system of Dokuz Eylül University). As it is known that rate of return of soft copies is very low in researches. Thus, in this study, the respondents' debis addresses were used in order to increase the participant rate.

Moreover, soft copy surveys were sent to students before their class started. After that, when the course started, students were informed about the questionnaire. Then required time was given to complete their questionnaires by using their cell phones or laptops. At the same time, the number of students that attended to survey was seen by researcher so the soft copy version is implemented as a hard copy version. Besides, in soft copy version there is no missing part due to the design of its format. Moreover, participants gave instant response so there is no need to wait for feedback from their private mails. Thus, this application is beneficial to the research and it increases participation rates.

Totally, 487 questionnaires are filled by respondents but 26 of them are not evaluated due to the missing values. Only the hard copies include missing values because of the software design cannot allow them to skip any questions. Therefore, total participants are 461 people.

3.2. DATA ANALYSIS AND FINDINGS

The respondents' data are analyzed by using SPSS Statistics software program. Descriptive statistics, reliability test, linear regression analysis, paired samples t-test and independent samples t-test are chosen as analysis tools for this research. Three different healthy eating nudge types are used to observe the effects of nudge theory on consumers' decisions.

3.2.1. Descriptive Statistics

The demographics part contains gender, age, income level, education level and consumption habits of respondents. The frequency tables are used to show these data.

In this study, six different questionnaires are applied to 461 respondents (447 undergraduate, 14 graduate students). The number of females and males are approximately equal to each other and percentages are given as 52.1% and 47.9%, respectively. The gender distribution of the sample is shown in Table 8. Besides, gender is nearly equal to each other for each questionnaire. In addition, the mean age of participants is 21.39 and the range between maximum and minimum age is 9. Table 9 indicates the details of demographics of respondents.

Table 8: The Gender of Total Respondents in Each Questionnaire

Product Involvement	Nudge Types	Number of Females	Number of Males	Total Frequency
High Involvement Product	Nudge 1	34	40	74
	Nudge 2	42	33	75
	Nudge 3	44	38	82
Low Involvement Product	Nudge 1	40	32	72
	Nudge 2	37	43	80
	Nudge 3	43	35	78
The Results of Both Products	Total Frequency	240	221	461
	Total Percentage	52.1%	47.9%	100%

According to the analysis, Table 9 shows that the household income of respondents is mostly at middle-income level and more than half of the respondents often consume healthy chocolate.

Table 9: The Demographics of Respondents

	<i>Category</i>	<i>Frequency</i>	<i>Percent (%)</i>
Age	18-22	335	72.7
	23-27	126	27.3
	Total	461	100%
Income Level	1000 TL and below	18	3.9
	1001 TL - 3000 TL	103	22.4
	3001 TL - 5000 TL	173	37.5
	5001 TL - 7000 TL	96	20.8
	7001 TL and above	71	15.4
	Total	461	100%
Consumption Habits	Everyday	54	11.7
	2-4 times a week	132	28.7
	Once in a week	112	24.3
	Once in two weeks	60	13
	Once in a month	72	15.6
	Never	31	6.7
	Total	461	100%

3.2.2. Results of High Involvement Product

In this part, Nudge 1, Nudge 2 and Nudge 3 are evaluated according to high involvement products questionnaires' results and truffle chocolate is used as a high involvement research product. In order to test main hypotheses (H_1 , H_2 , H_3), paired samples t-test is used. Other hypotheses, which are related to main hypotheses, are tested by using regression analysis.

In this study, **Nudge 1** refers to "Nutritional labeling", **Nudge 2** refers to "Hedonic enhancements" and **Nudge 3** refers to "Healthy eating calls."

3.2.2.1. Reliability Test

The reliability indicates how consistent the research is (Saunders, Lewis and Thornhill, 2009). Cronbach's Alpha is used for this research to measure internal consistency.

The reliability test is applied for all items and additionally for four health consciousness items in each questionnaire. According to the literature, if the Cronbach's Alpha is between $0.8 \leq \alpha < 0.9$, it means that the reliability is good (George & Mallery, 2003; Saunders et al., 2009). If α is higher than 0.9, it means that the reliability is excellent. In addition, if the alpha is higher than 0.7, it is also acceptable.

In questionnaire 1, the reliability of total items that is measured by Cronbach's Alpha is 0.827, so the reliability of the research is high enough. In addition, the results show that health consciousness questions are reliable due to Cronbach's Alpha is 0.813. Table 10 indicates other Cronbach's Alpha outcomes of questionnaires that are also in acceptable reliability range. High reliability means that these questions measure health consciousness level of the consumers'. Moreover, it shows that all other questions are reliable, so survey questions are convenient for the research.

Table 10: Reliability Statistics of High Involvement Questionnaires' Items

Questionnaire	Reliability Statistics	Cronbach's Alpha	N of Items
Q ₁ (Nudge 1)	Total	0,827	10
	Health Consciousness	0,813	4
Q ₂ (Nudge 2)	Total	0,799	10
	Health Consciousness	0,743	4
Q ₃ (Nudge 3)	Total	0,851	10
	Health Consciousness	0,820	4

3.2.2.2. Paired Samples T-test

Paired samples t-test is used to test main hypotheses H₁, H₂ and H₃. The test is applied to three nudge types separately.

The paired samples t-test, which also named dependent sample t-test, evaluates the probability of the pair of data whether their means are significantly different from each other or not. The data include pair of observations that is collected from the same participant in the sample. Generally, paired samples t-test is used for case-control research studies and before & after situations of any research case studies (Saunders, Lewis and Thornhill, 2009).

- **Nutritional Labeling (Nudge 1)**

Table 11 indicates that mean value of purchase intention with using nutritional labeling nudge is higher than mean value of purchase intention without using nutritional labeling nudge. Mean value increases from 2.85 to 3.68.

The result of paired t-test is statistically significant due to $p \leq 0.05$. The results indicate that there is a significant difference between purchase intention without using nudge and with using nutritional labeling nudge. In addition, the mean value significantly increases by using nutritional labeling nudge.

According to the following results, $t(73) = -7.309$, $p=0.000 \leq 0.05$, $M_{N_0} = 2.85$ and $M_{N_1} = 3.68$. H_1 , which is “Nutritional labeling type of nudge positively affects consumers’ purchase intention of healthy chocolate”, is supported.

In the following tables, N_0 refers to purchase intention before using related types of nudge and N_1 refers to purchase intention after using related types of nudge.

Table 11: Paired Samples Statistics of High Involvement Product for Nudge 1

	Mean	N	Std. Deviation	Std. Error Mean
N_0	2,85	74	1,094	,127
N_1	3,68	74	1,183	,138

Table 12: Paired Samples Test of High Involvement Product for Nudge 1

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
N0 - N1	-,824	0,970	,113	-1,049	-,600	-7,309	73	,000

• Hedonic Enhancement (Nudge 2)

The mean value of purchase intention with using hedonic enhancements nudge is higher than mean value of purchase intention without using hedonic enhancement nudge. Mean value increases from 3.01 to 3.67. According to results, there is a significant difference between purchase intention without using nudge and with using hedonic enhancement nudge ($p \leq 0.05$). The mean value significantly increases by using hedonic enhancement nudge. According to the following results, $t(74) = -6.686$, $p=0.000 \leq 0.05$, $M_{N_0} = 3.01$ and $M_{N_1} = 3.67$ so H_2 is supported.

Table 13: Paired Samples Statistics of High Involvement Product for Nudge 2

	Mean	N	Std. Deviation	Std. Error Mean
N_0	3,01	75	1,033	,119
N_1	3,67	75	1,155	,133

Table 14: Paired Samples Test of High Involvement Product for Nudge 2

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
N0 - N1	-,653	,846	,098	-,848	-,459	-6,686	74	,000

- **Healthy Eating Calls (Nudge 3)**

The result shows that mean value of purchase intention with using healthy eating calls nudge is higher than mean value of purchase intention without using nudge. Mean value increases from to 2.79 to 3.56. There is a significant difference between purchase intention without using nudge and with using healthy eating nudge and mean value significantly increases by using healthy eating calls nudge. According to the following result, $t(82) = -7.452$, $p=0.000 \leq 0.05$, $M_{N0}= 2.79$ and $M_{N1}=3.56$, H_3 is supported.

Table 15: Paired Samples Statistics of High Involvement Product for Nudge 3

	Mean	N	Std. Deviation	Std. Error Mean
N ₀	2,79	82	1,235	,136
N ₁	3,56	82	1,458	,161

Table 16: Paired Samples Test of High Involvement Product for Nudge 3

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
N0 - N1	-,768	,934	,103	-,973	-,563	-7,452	81	,000

3.2.2.3. Summary of Results

To sum up, results indicate that mean values of purchase intention with using nutritional labeling nudge, healthy eating calls nudge and hedonic enhancements nudge are significantly different from mean values of purchase intention without using related nudge types. Nudges positively affect purchase intention of healthy chocolate.

At 95% confidence interval, main hypotheses of high involvement product, H₁, H₂, H₃ are supported.

Table 17: Summary Results of High Involvement Product

Product Involvement	Hypothesis	t-value	p-value	Result
High Involvement Product	H ₁	-7.309	.000*	Supported
	H ₂	-6.686	.000*	Supported
	H ₃	-7.452	.000*	Supported

3.2.2.4. Factor Analysis

Factor analysis is used for dimension reduction. It explains variation between the observed variables. In this study, four items measure the health consciousness level of consumers. The aim is to reduce the number of the independent variables to factors or components, if these variables are highly correlated.

The KMO tests show whether the data is suitable for factor analysis or not. KMO results of Q₁, Q₂, Q₃ are 0.717, 0.712, 0.767 respectively, so it means that sampling is adequate for factor analysis, thus factor analysis can be implemented for variables. Table 18 indicates that variables are significantly correlated according to the results (Bartlett's Test).

Table 18: KMO and Bartlett's Test

Questionnaire	Kaiser-Meyer-Olkin Measure of Sampling Adequacy	Bartlett's Test of Sphericity
Q ₁ (Nudge 1)	,717	,000
Q ₂ (Nudge 2)	,712	,000
Q ₃ (Nudge 3)	,767	,000

According to the principal component analysis, these factor loadings in component matrix indicate the relationship between items and component. According to Table 19, items are highly correlated with component. For instance, health

consciousness 3 item has the highest correlation with its component in questionnaire 1 when comparing other three health consciousness items. Four health consciousness variables are reduced to one component. In other words, this component explains the relationship between these four items in each questionnaire. The percentages of the variances of Q₁, Q₂ and Q₃ that are explained by one component are 66.2 %, 59.5 %, 66.4 %, respectively.

Table 19: Component Matrix of High Involvement Product Questionnaires' Items

	Items	Component 1	Explained Variance
Factor Analysis for Q₁	Health Consciousness 1	,844	66.215%
	Health Consciousness 2	,882	
	Health Consciousness 3	,885	
	Health Consciousness 4	,612	
Factor Analysis for Q₂	Health Consciousness 1	,827	59,525%
	Health Consciousness 2	,847	
	Health Consciousness 3	,885	
	Health Consciousness 4	,544	
Factor Analysis for Q₃	Health Consciousness 1	,772	66,363%
	Health Consciousness 2	,888	
	Health Consciousness 3	,902	
	Health Consciousness 4	,675	

3.2.2.5. Regression Analysis

Regression analysis is applied in order to test other hypotheses that are related to main hypotheses. According to regression analysis results, degree of liking behavior of healthy chocolate, subjective norm, attitude and health consciousness level of consumers are some of the reasons why people are affected by healthy eating nudges in their purchase intentions. Apart from the perceived availability hypotheses, the other hypotheses are supported by using regression analysis.

The following Table 20 shows the supported and rejected hypotheses (If $p \leq 0.05$, the result is significant so the hypothesis is supported). R square shows the

explanatory power of the regression analysis. For instance, according to H_{1b} result, the health consciousness level of consumer explains 23% variation of the purchase intention (with nudge). It can be said that some factors' effect sizes on purchase intention with nudge are small when R^2 is considered. Because there can be other factors that affect humans purchase intention such as consumer values, product types etc. This study only examines five factors that affect purchase intention with nudge.



Table 20: The Results of Regression Analysis of High Involvement Product

		Hypotheses	B	Standard Error	Stand. Coef. β	T	P-Value	R ²	Result
High Involvement Nudge 1	H_{1a}	Degree of liking behavior→ Purchase Intention	0.613	0.112	0.542	5.471	0.000*	0.294	Supported
	H_{1b}	Health consciousness→ Purchase Intention	0.691	0.149	0.480	4.647	0.000*	0.231	Supported
	H_{1c}	Attitude→ Purchase Intention	0.674	0.135	0.508	5.000	0.000*	0.258	Supported
	H_{1d}	Subjective Norm→ Purchase Intention	0.391	0.098	0.425	3.985	0.000*	0.181	Supported
	H_{1e}	Perceived Availability→ Purchase Intention	0.107	0.128	0.098	0.835	0.406	0.010	Rejected
High Involvement Nudge 2	H_{2a}	Degree of liking behavior→ Purchase Intention	0.413	0.124	0.362	3.318	0.001*	0.131	Supported
	H_{2b}	Health consciousness→ Purchase Intention	0.579	0.154	0.402	3.754	0.000*	0.162	Supported
	H_{2c}	Attitude→ Purchase Intention	0.546	0.136	0.425	4.015	0.000*	0.181	Supported
	H_{2d}	Subjective Norm→ Purchase Intention	0.533	0.085	0.590	6.237	0.000*	0.348	Supported
	H_{2e}	Perceived Availability→ Purchase Intention	0.167	0.113	0.169	1.469	0.146	0.029	Rejected
High Involvement Nudge 3	H_{3a}	Degree of liking behavior→ Purchase Intention	0.441	0.121	0.378	3.653	0.000*	0.143	Supported
	H_{3b}	Health consciousness→ Purchase Intention	0.691	0.154	0.449	4.498	0.000*	0.202	Supported
	H_{3c}	Attitude→ Purchase Intention	0.427	0.123	0.361	3.457	0.001*	0.130	Supported
	H_{3d}	Subjective Norm→ Purchase Intention	0.419	0.097	0.436	4.328	0.000*	0.190	Supported
	H_{3e}	Perceived Availability→ Purchase Intention	0.203	0.145	0.155	1.407	0.163	0.024	Rejected

(*p ≤ 0.05)

3.2.3. Results of Low Involvement Product

In this part, Nudge 1, Nudge 2 and Nudge 3 are evaluated according to results of questionnaires of low involvement products. Tablet chocolate is used as a low involvement research product. Same tests of high involvement product are applied to data.

3.2.3.1. Reliability Test

Cronbach's Alpha results of questionnaires are in acceptable reliability range. The results indicate that all questionnaires' reliability is high.

Table 21: Reliability Statistics of Low Involvement Questionnaires' Items

Questionnaire	Reliability Statistics	Cronbach's Alpha	N of Items
Q ₄ (Nudge 1)	Total	0,795	10
	Health Consciousness	0,796	4
Q ₅ (Nudge 2)	Total	0,755	10
	Health Consciousness	0,727	4
Q ₆ (Nudge 3)	Total	0,761	10
	Health Consciousness	0,704	4

3.2.3.2. Paired Samples T-test

Paired samples t-test is used in order to test main hypotheses H₄, H₅, H₆.

- **Nutritional Labeling (Nudge 1)**

Table 22 shows that mean value of purchase intention with using nutritional labeling nudge is higher than mean value of purchase intention without using nutritional labeling nudge. According to the following results, $t(71) = -9.428$, $p=0.000 \leq 0.05$, $M_{N0} = 2.74$ and $M_{N1}=3.82$, there is a significant increase between purchase intention without using nudge and with using nutritional labeling nudge.

Table 22: Paired Samples Statistics of Low Involvement Product for Nudge 1

	Mean	N	Std. Deviation	Std. Error Mean
N ₀	2,74	72	,993	,117
N ₁	3,82	72	,983	,116

Table 23: Paired Samples Test of Low Involvement Product for Nudge 1

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
N0 - N1	-1,083	,975	,115	-1,312	-,854	-9,428	71	,000

- Hedonic Enhancement (Nudge 2)**

The mean value of purchase intention with using hedonic enhancements nudge is higher than mean value of purchase intention without using hedonic enhancement nudge. Results demonstrate that $t(79) = -9.189$, $p=0.000 \leq 0.05$, $M_{N0} = 3.09$, $M_{N1} = 4.08$ there is a significant increase between purchase intention without using nudge and with using hedonic enhancement nudge.

Table 24: Paired Samples Statistics of Low Involvement Product for Nudge 2

	Mean	N	Std. Deviation	Std. Error Mean
N ₀	3,09	80	1,034	,116
N ₁	4,08	80	,991	,111

Table 25: Paired Samples Test of Low Involvement Product for Nudge 2

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
N0 - N1	-.988	.961	.107	-1.201	-.774	-9.189	79	.000

- **Healthy Eating Calls (Nudge 3)**

The mean value of purchase intention by using healthy eating calls nudge is higher than mean value of purchase intention without using healthy eating calls nudge. Following result shows that $t(77) = -9.539$, $p=0.000 \leq 0.05$, $M_{N0} = 2.83$, $M_{N1}=3.83$ so there is a significant increase between purchase intention without using nudge and with using health eating calls nudge.

Table 26: Paired Samples Statistics of Low Involvement Product for Nudge 3

	Mean	N	Std. Deviation	Std. Error Mean
N ₀	2,83	78	1,050	,119
N ₁	3,83	78	1,074	,122

Table 27: Paired Samples Test of Low Involvement Product for Nudge 3

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
N0 - N1	-1,000	,926	,105	-1,209	-,791	-9,539	77	,000

3.2.3.3. Summary of Results

Nudges positively affect the purchase intention of healthy chocolate. The hypotheses of low involvement product (H_4 , H_5 , H_6) are supported.

Table 28: Summary Results of Low Involvement Product

Product Involvement	Hypothesis	t-value	p-value	Result
Low Involvement Product	H ₄	-9.428	.000*	Supported
	H ₅	-9.189	.000*	Supported
	H ₆	-9.539	.000*	Supported

3.2.3.4. Factor Analysis

According to the KMO results of Q₄, Q₅, Q₆ are 0.719, 0.696, 0.687 respectively, so sampling is adequate for factor analysis. According to the Bartlett's test results, variables are significantly correlated.

Table 29: KMO and Bartlett's Test

Questionnaire	Kaiser-Meyer-Olkin Measure of Sampling Adequacy	Bartlett's Test of Sphericity
Q ₄ (Nudge 1)	,719	,000
Q ₅ (Nudge 2)	,696	,000
Q ₆ (Nudge 3)	,687	,000

Principal component analysis results indicate that four health consciousness variables are reduced to one component in each questionnaire.

The percentages of the variances of Q₄, Q₅ and Q₆ that are explained by the one component are 63%, 56%, 54%, respectively.

Table 30: Component Matrix of Low Involvement Product Questionnaires' Items

	Items	Component 1	Explained Variance
Factor Analysis for Q₄	Health Consciousness 1	,661	63,478 %
	Health Consciousness 2	,898	
	Health Consciousness 3	,886	
	Health Consciousness 4	,715	
Factor Analysis for Q₅	Health Consciousness 1	,725	56,418 %
	Health Consciousness 2	,830	
	Health Consciousness 3	,865	
	Health Consciousness 4	,542	
Factor Analysis for Q₆	Health Consciousness 1	,667	53,897 %
	Health Consciousness 2	,839	
	Health Consciousness 3	,819	
	Health Consciousness 4	,580	

3.2.3.5. Regression Analysis

Regression analysis results indicate that degree of liking behavior of healthy chocolate, subjective norm, attitude and health consciousness level of consumers are some of the reasons why people are affected by healthy eating nudges in their purchase intentions. Moreover, perceived availability has no effect on purchase intention of healthy chocolate. The findings are similar with high involvement product results.

The following Table 31 shows the supported and rejected hypotheses of low involvement product. According to H_{4b} result, health consciousness level of consumer explains 34% variation of the purchase intention (with nudge). Another inference is that results of H_{5c} indicate that 32% variance in purchase intention is explained by attitude for nudge 2.

Table 31: The Results of Regression Analysis of Low Involvement Product

Hypotheses			B	Standard Error	Stand. Coef. β	t	p-value	R ²	Result
Low Involvement Nudge 1	H _{4a}	Degree of liking behavior→ Purchase Intention	0.546	0.102	0.539	5.358	0.000*	0.291	Supported
	H _{4b}	Health consciousness→ Purchase Intention	0.644	0.106	0.586	6.048	0.000*	0.343	Supported
	H _{4c}	Attitude→ Purchase Intention	0.383	0.103	0.405	3.711	0.000*	0.164	Supported
	H _{4d}	Subjective Norm→ Purchase Intention	0.239	0.090	0.302	2.651	0.010*	0.091	Supported
	H _{4e}	Perceived Availability→ Purchase Intention	0.084	0.108	0.093	0.781	0.437	0.009	Rejected
Low Involvement Nudge 2	H _{5a}	Degree of liking behavior→ Purchase Intention	0.507	0.090	0.538	5.634	0.000*	0.289	Supported
	H _{5b}	Health consciousness→ Purchase Intention	0.450	0.140	0.343	3.222	0.002*	0.117	Supported
	H _{5c}	Attitude→ Purchase Intention	0.559	0.091	0.571	6.143	0.000*	0.326	Supported
	H _{5d}	Subjective Norm→ Purchase Intention	0.511	0.078	0.597	6.579	0.000*	0.357	Supported
	H _{5e}	Perceived Availability→ Purchase Intention	0.095	0.101	0.106	0.945	0.347	0.011	Rejected
Low Involvement Nudge 3	H _{6a}	Degree of liking behavior→ Purchase Intention	0.330	0.102	0.349	3.242	0.002*	0.121	Supported
	H _{6b}	Health consciousness→ Purchase Intention	0.587	0.134	0.448	4.373	0.000*	0.201	Supported
	H _{6c}	Attitude→ Purchase Intention	0.297	0.112	0.292	2.660	0.010*	0.085	Supported
	H _{6d}	Subjective Norm→ Purchase Intention	0.268	0.087	0.334	3.093	0.003*	0.112	Supported
	H _{6e}	Perceived Availability→ Purchase Intention	0.230	0.124	0.209	1.860	0.067	0.044	Rejected

(*p ≤ 0.05)

3.3. THE RESULTS OF HIGH & LOW INVOLVEMENT PRODUCT COMPARISONS DEPENDING ON NUDGE TYPES

Independent samples t-test is applied in order to test H₇, H₈ and H₉. The test compares the means of two independent groups.

3.3.1. Nutritional Labeling Nudge

Table 32 indicates descriptive informations such as means, standard deviations and standard error of the groups.

Levene's Test measures the homogeneity of variance. According to results, p-value is 0.054 that is higher than 0.05, so the variance of purchase intention by using nutritional labeling nudge for high involvement product is equal to variance of purchase intention by using nutritional labeling nudge for low involvement product.

Homogeneities of variances are equal to each other so "equal variances assumed row" is used for an evaluation. P-value is higher than 0.05 thus the result is not significant ($t(144) = -0.797$, $p=0.427$). In other words, there is no significant difference between purchase intention by using nutritional labeling nudge for high involvement product and purchase intention by using nutritional labeling nudge for low involvement product. Thus, H₇ is rejected.

The product involvement level (high & low) does not have an influence on nutritional labeling type of nudge used for purchase intention of healthy chocolate.

Table 32: Group Statistics of Nudge 1

Types of Nudges		N	Mean	Std. Deviation	Std. Error Mean
N ₁	Nudge 1 High	74	3,68	1,183	,138
	Nudge 1 Low	72	3,82	,983	,116

Table 33: Independent Samples Test of Nudge 1

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2- tailed)	Mean Differen ce	Std. Error Differ ence	95% Confidence Interval of the Difference	
									Lower	Upper
N ₁	Equal variances assumed	3,778	,054	-,797	144	,427	-,144	,180	-,500	,213
	Equal variances not assumed			-,799	140,584	,425	-,144	,180	-,499	,212

3.3.2. Hedonic Enhancement Nudge

Levene's test for equality of variances result indicates that variance of two groups are not equal to each other because p value is lower than 0.05 ($p = 0.032$).

"Equal variances not assumed row" is used for interpretation because the variances' homogeneities are not equal to each other. The result is significant since p value is lower than 0.05 ($t(146.175) = -2.356, p = 0.02$).

Consequently, there is a significant difference between purchase intention by using hedonic enhancement nudge for high involvement product and purchase intention by using hedonic enhancement nudge for low involvement product. Therefore, H_8 is supported.

The product involvement level (high & low) has an influence on hedonic enhancement type of nudge used for purchase intention of healthy chocolate.

Table 34: Group Statistics of Nudge 2

Types of Nudges		N	Mean	Std. Deviation	Std. Error Mean
N ₁	Nudge 2 High	75	3,67	1,155	,133
	Nudge 2 Low	80	4,08	,991	,111

Table 35: Independent Samples Test of Nudge 2

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
N ₁	Equal variances assumed	4,681	,032	-2,367	153	,019	-,408	,172	-,749	-,068
	Equal variances not assumed			-2,356	146,175	,020	-,408	,173	-,751	-,066

3.3.3. Healthy Eating Calls Nudge

The result indicates that variance of two groups are not equal to each other because p value is lower than 0.05 ($p = 0.01$).

“Equal variances not assumed row” is used for interpretation due to the variances’ homogeneities are not equal to each other. The result is significant because p value is lower than 0.05 ($t(148,829) = -1,350$ $p = 0.179$).

Purchase intention by using healthy eating calls nudge for high involvement product does not have a significant difference from the purchase intention by using healthy eating calls nudge for low involvement product. Therefore, H_9 is rejected.

The product involvement level (high & low) does not have an influence on healthy eating calls type of nudge used for purchase intention of healthy chocolate.

Table 36: Group Statistics of Nudge 3

Types of Nudge		N	Mean	Std. Deviation	Std. Error Mean
N ₁	Nudge 3 High	82	3,56	1,458	,161
	Nudge 3 Low	78	3,83	1,074	,122

Table 37: Independent Samples Test of Nudge 3

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2- tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
N ₁	Equal variances assumed	12,556	,001	-1,340	158	,182	-,272	,203	-,674	,129
	Equal variances not assumed			-1,350	148,829	,179	-,272	,202	-,671	,126

3.3.4. Comparison Results

According to the comparison results, H₈ is supported and H₇, H₉ are rejected. Consequently, product involvement level has an influence on hedonic enhancement type of nudge used for purchase intention of healthy chocolate. In addition, purchase intention does not have an influence on nutritional labeling and healthy eating calls nudge types used for purchase intention of healthy chocolate.

The most important inference is that the influence of product involvement level can be differentiated depending on the used nudge types.

Table 38: Summary of Comparison Results

Hypothesis	p-value	Result
H ₇	.427	Rejected
H ₈	.020*	Supported
H ₉	.179	Rejected

CONCLUSION

In many areas, such as marketing, economics, consumer behavior and finance choices always shape our lives. When there are anomalies in economics, such as financial crisis or some different purchasing behavior that cannot be explained by standard views, the behavioral economics concepts can help scholars and practitioners to explain the situation clearly. In other words, behavioral economics is known to have a more explanatory power on human decision process than the standard economic views.

When the academic studies are investigated, it can be seen that new studies are needed to explain some ambiguous decision making situations. Especially after the Nobel Economics prize was awarded to Richard Thaler in 2017, nudge theory that has a promising future received considerable attention from scholars.

Humans face with many decision bottlenecks due to many heuristics and biases. In this perspective, nudging is beneficial to explain the irrational behaviors of individuals. The literature review shows that nudge theory can be implemented in many aspects such as healthy eating (Cadario & Chandon, 2018), energy efficient behavior (Sunstein, 2014), public policies (Sunstein, 2014; Thaler & Sunstein, 2008; Alemanno, 2015; Caldwell, 2018). In this perspective, the effect of nudge theory on consumer purchase intention is chosen as the topic of this study. This study aims to create a value for both consumers and companies by using nudge theory. This area seems to be developable and there is a need in the literature for further investigation of nudge theory affecting healthy food consumption (Cadario & Chandon, 2018).

Studies about nudging consumers towards healthy food consumption were mainly conducted in developed countries such as USA (Chance et al., 2014, Thaler & Sunstein, 2008) and Denmark (Houlby and Nørnberg, 2014; Fahrländer, 2017). In addition, many other studies about healthy eating nudges were conducted in Europe (Collins, Bucher, McCaffrey, Rollo et al., 2016; Reisch, Sunstein and Gwozdz, 2017). To the best of the author's knowledge, there is not any academic research related to applying nudge theory to healthy food consumption in Turkey. Therefore, this is the

first study to analyze the effects of nudging consumers towards healthy food consumption in Turkey.

In consumer decision making process, evaluation of purchase intention is vital because intentions are principal predictors of individuals' real actions. In this comprehensive study, three healthy eating nudge types are chosen for this research (Cadario and Chandon, 2018; Reisch, Sunstein, Rauber, 2017). The economic incentives such as prices of the products are not examined in this study based on the previous studies and explanations of the nudge theory (Thaler & Sunstein 2008; Ly, Mažar, Soman & Zhao, 2013; Cadario & Chandon, 2018). Additionally, the reasons that may affect nudging are also investigated. Last but not least, findings are compared according to the product involvement level of the product chosen for this study (tablet chocolate vs. truffle chocolate).

According to the results, it can be said that all three nudges have positive effects on purchase intention of tablet and truffle chocolates. Results indicate that there is a significant increase in consumer purchase intention when the nudge theory is applied.

The second objective of this study is to analyze the underlying reasons of the effects of nudging. More specifically, factors such as degree of liking behavior, attitudes, subjective norms, and health consciousness level of consumers have been investigated and it is found that these factors are some of the reasons behind why individuals are affected by nudging. In other words, these factors positively affect purchase intention of consumers. Furthermore, the results indicate that consumers' perceived availability of consumption product is ineffective on explaining the effect of nudging.

Another important inference is that the influence of product involvement level can be differentiated depending on the used nudge types. According to results, the product involvement level has an influence on hedonic enhancement type of nudge used for purchase intention of healthy chocolate. On the contrary, the product involvement level does not have an influence on nutritional labeling type of nudge and healthy eating calls type of nudge used for purchase intention of healthy chocolate.

This study may provide some theoretical and managerial implications. Theoretically, this is the first study to analyze nudging consumers towards healthy food consumption in Turkey. Additionally this study is expected to contribute to the literature in terms of investigating the underlying reasons of nudging, more specifically through TRA.

This study contributes to explanation of the consumer decision-making behavior of individuals by using nudge theory application. Healthy eating nudges directly affect the decisions that people make when evaluating a particular product. Consequently, this study indicates the human tendency to irrational behaviors by using nudge application. In this perspective, the results of this study can lay the groundwork for creating new and effective marketing strategies for the companies in order to gain competitive advantages in business game.

Several managerial implications can be derived from this study. According to inferences of this study, companies are recommended to use nutritional labeling, hedonic enhancement and healthy eating calls nudges as a marketing strategy. Compared to high budget advertisement campaigns, using healthy eating nudges on the packaging, which has low cost for the companies, can lead consumers to have higher intention to purchase healthy chocolates. According to consumer perspective, this increase will eventually mean to lead consumers to make better choices, which is the main objective of nudging.

This study has some limitations, which need to be addressed to provide recommendations for further research. First, due to the sample size, results of the study cannot be generalized to the population. Secondly, the study is conducted on the university students, which may not reflect consumers as a whole. Further studies are needed to apply this research on different samples that reflect different demographics. In addition, behavior stage of TRA has not been investigated in this study.

In further researches, it is recommended that another nudge types can be applicable in many fields. Moreover, same healthy eating nudge types used in this study can be applied by using different consumption products.

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APPENDICES

Appendix 1: Questionnaire 1

Dear Participant,

This questionnaire is implemented by Dokuz Eylül University MBA student Melisa Korkut for an academic purpose. Please answer the following questions by choosing the most appropriate option for you. Your participation for this survey is completely anonymous and voluntarily.

Thank you for your attendance.

1. Gender:

- ☐ Female
- ☐ Male

2. Age: _____

3. Education Level:

- ☐ Bachelor's student
- ☐ Master's student

4. Monthly income of your family

- ☐ 1000 TL and below
- ☐ 1001 TL-3000 TL
- ☐ 3001 TL-5000 TL
- ☐ 5001 TL- 7000 TL
- ☐ 7001 TL and above

5. I eat healthy chocolate (the chocolate that made of healthy ingredients) _____

- ☐ Everyday
- ☐ 2-4 times a week
- ☐ Once a week
- ☐ In every 15 days
- ☐ Once in a month
- ☐ Never

6. Please mark the option that is suitable for you (1= Strongly Disagree, 5=Strongly Agree)

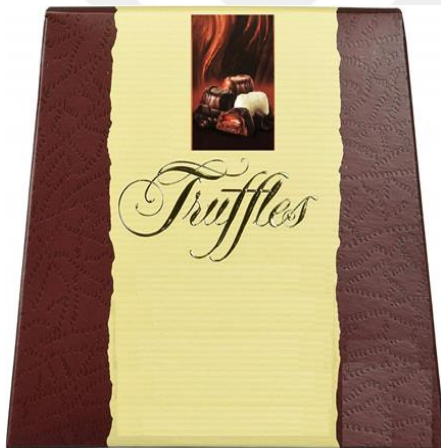
		Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1.	I like eating healthy chocolate.	1	2	3	4	5
2.	I always check the ingredients of products to make a healthy chocolate choice.	1	2	3	4	5
3.	I choose food carefully to ensure my health.	1	2	3	4	5
4.	I think of myself as a health-conscious consumer.	1	2	3	4	5
5.	I often think about health issues.	1	2	3	4	5
6.	I think that buying a healthy chocolate is reasonable.	1	2	3	4	5
7.	People, who are important to me, think that I should buy a healthy chocolate. (Family, friends)	1	2	3	4	5
8.	Healthy chocolates are always sufficiently accessible.	1	2	3	4	5

The Definition of Truffle Chocolate: A chocolate truffle is a kind of handmade chocolate dessert. Truffles are made of ganache (kind of chocolate-based cream) and they include some type of coating (e.g. solid chocolate such as white, milk or dark chocolate). Generally, truffles are in a curved, spherical (ball-shaped) or conical shape.



Scenario 1

The X brand truffle chocolate that you see on the image has a deep-rooted history. It is an international brand and it is highly liked by consumers. This X brand of chocolate has a milk, bitter and white chocolate options.



Please mark the option that is suitable for you (1= Strongly Disagree, 5=Strongly Agree)

		Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1.	I have an intention to buy this product in the near future.	1	2	3	4	5

Please find the following words in the table below (left to right or top to bottom).

BOOK, PIANO, MIRROR

K	M	T	L	M
N	G	U	S	I
B	O	O	K	R
T	C	I	L	R
P	I	A	N	O
N	W	E	U	R
M	K	A	O	A

Scenario 2

The X brand truffle chocolate that you see on the image has a deep-rooted history. It is an international brand and it is highly liked by consumers. This X brand of chocolate has a milk, bitter and white chocolate options.

This chocolate is produced by using healthy and 100% organic food stuffs.



Please mark the option that is suitable for you (1= Strongly Disagree, 5=Strongly Agree)

		Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1.	I have an intention to buy this product in the near future.	1	2	3	4	5

Appendix 2: Questionnaire 2

Dear Participant,

This questionnaire is implemented by Dokuz Eylül University MBA student Melisa Korkut for an academic purpose. Please answer the following questions by choosing the most appropriate option for you. Your participation for this survey is completely anonymous and voluntarily.

Thank you for your attendance.

1. Gender:

- ☐ Female
- ☐ Male

2. Age: _____

3. Education Level:

- ☐ Bachelor's student
- ☐ Master's student

4. Monthly income of your family

- ☐ 1000 TL and below
- ☐ 1001 TL-3000 TL
- ☐ 3001 TL-5000 TL
- ☐ 5001 TL- 7000 TL
- ☐ 7001 TL and above

5. I eat healthy chocolate (the chocolate that made of healthy ingredients) _____

- ☐ Everyday
- ☐ 2-4 times a week
- ☐ Once a week
- ☐ In every 15 days
- ☐ Once in a month
- ☐ Never

6. Please mark the option that is suitable for you (1= Strongly Disagree, 5=Strongly Agree)

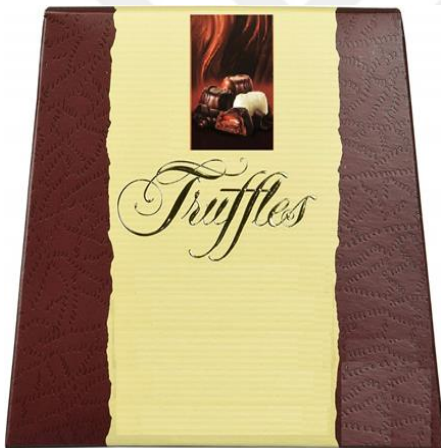
		Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1.	I like eating healthy chocolate.	1	2	3	4	5
2.	I always check the ingredients of products to make a healthy chocolate choice.	1	2	3	4	5
3.	I choose food carefully to ensure my health.	1	2	3	4	5
4.	I think of myself as a health-conscious consumer.	1	2	3	4	5
5.	I often think about health issues.	1	2	3	4	5
6.	I think that buying a healthy chocolate is reasonable.	1	2	3	4	5
7.	People, who are important to me, think that I should buy a healthy chocolate. (Family, friends)	1	2	3	4	5
8.	Healthy chocolates are always sufficiently accessible.	1	2	3	4	5

The Definition of Truffle Chocolate: A chocolate truffle is a kind of handmade chocolate dessert. Truffles are made of ganache (kind of chocolate-based cream) and they include some type of coating (e.g. solid chocolate such as white, milk or dark chocolate). Generally, truffles are in a curved, spherical (ball-shaped) or conical shape.



Scenario 1

The X brand truffle chocolate that you see on the image has a deep-rooted history. It is an international brand and it is highly liked by consumers. This X brand of chocolate has a milk, bitter and white chocolate options.



Please mark the option that is suitable for you (1= Strongly Disagree, 5=Strongly Agree)

		Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1.	I have an intention to buy this product in the near future.	1	2	3	4	5

Note: The same crossword of Questionnaire 1 is applied to the sample.

Scenario 2

The X brand truffle chocolate that you see on the image has a deep-rooted history. It is an international brand and it is highly liked by consumers. This X brand of chocolate has a milk, bitter and white chocolate options.

Treat yourself with unique, amazing and at the same time healthy and heart friendly truffle!



Please mark the option that is suitable for you (1= Strongly Disagree, 5=Strongly Agree)

		Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1.	I have an intention to buy this product in the near future.	1	2	3	4	5

Appendix 3: Questionnaire 3

Dear Participant,

This questionnaire is implemented by Dokuz Eylül University MBA student Melisa Korkut for an academic purpose. Please answer the following questions by choosing the most appropriate option for you. Your participation for this survey is completely anonymous and voluntarily.

Thank you for your attendance.

1. Gender:

- ☐ Female
- ☐ Male

2. Age: _____

3. Education Level:

- ☐ Bachelor's student
- ☐ Master's student

4. Monthly income of your family

- ☐ 1000 TL and below
- ☐ 1001 TL-3000 TL
- ☐ 3001 TL-5000 TL
- ☐ 5001 TL- 7000 TL
- ☐ 7001 TL and above

5. I eat healthy chocolate (the chocolate that made of healthy ingredients) _____

- ☐ Everyday
- ☐ 2-4 times a week
- ☐ Once a week
- ☐ In every 15 days
- ☐ Once in a month
- ☐ Never

6. Please mark the option that is suitable for you (1= Strongly Disagree, 5=Strongly Agree)

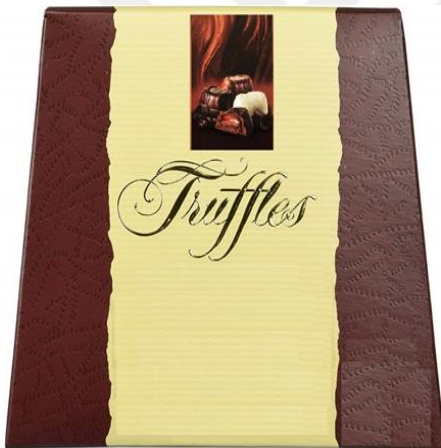
		Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1.	I like eating healthy chocolate.	1	2	3	4	5
2.	I always check the ingredients of products to make a healthy chocolate choice.	1	2	3	4	5
3.	I choose food carefully to ensure my health.	1	2	3	4	5
4.	I think of myself as a health-conscious consumer.	1	2	3	4	5
5.	I often think about health issues.	1	2	3	4	5
6.	I think that buying a healthy chocolate is reasonable.	1	2	3	4	5
7.	People, who are important to me, think that I should buy a healthy chocolate. (Family, friends)	1	2	3	4	5
8.	Healthy chocolates are always sufficiently accessible.	1	2	3	4	5

The Definition of Truffle Chocolate: A chocolate truffle is a kind of handmade chocolate dessert. Truffles are made of ganache (kind of chocolate-based cream) and they include some type of coating (e.g. solid chocolate such as white, milk or dark chocolate). Generally, truffles are in a curved, spherical (ball-shaped) or conical shape.



Scenario 1

The X brand truffle chocolate that you see on the image has a deep-rooted history. It is an international brand and it is highly liked by consumers. This X brand of chocolate has a milk, bitter and white chocolate options.



Please mark the option that is suitable for you (1= Strongly Disagree, 5=Strongly Agree)

		Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1.	I have an intention to buy this product in the near future.	1	2	3	4	5

Note: The same crossword of Questionnaire 1 is applied to the sample.

Scenario 2

The X brand truffle chocolate that you see on the image has a deep-rooted history. It is an international brand and it is highly liked by consumers. This X brand of chocolate has a milk, bitter and white chocolate options.

This chocolate is indicated as a heart-friendly chocolate by the Heart-Health Protection Foundation.



Please mark the option that is suitable for you (1= Strongly Disagree, 5=Strongly Agree)

		Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1.	I have an intention to buy this product in the near future.	1	2	3	4	5

Appendix 4: Questionnaire 4

Dear Participant,

This questionnaire is implemented by Dokuz Eylül University MBA student Melisa Korkut for an academic purpose. Please answer the following questions by choosing the most appropriate option for you. Your participation for this survey is completely anonymous and voluntarily.

Thank you for your attendance.

1. Gender:

- ☐ Female
- ☐ Male

2. Age: _____

3. Education Level:

- ☐ Bachelor's student
- ☐ Master's student

4. Monthly income of your family

- ☐ 1000 TL and below
- ☐ 1001 TL-3000 TL
- ☐ 3001 TL-5000 TL
- ☐ 5001 TL- 7000 TL
- ☐ 7001 TL and above

5. I eat healthy chocolate (the chocolate that made of healthy ingredients) _____

- ☐ Everyday
- ☐ 2-4 times a week
- ☐ Once a week
- ☐ In every 15 days
- ☐ Once in a month
- ☐ Never

6. Please mark the option that is suitable for you (1= Strongly Disagree, 5=Strongly Agree)

		Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1.	I like eating healthy chocolate.	1	2	3	4	5
2.	I always check the ingredients of products to make a healthy chocolate choice.	1	2	3	4	5
3.	I choose food carefully to ensure my health.	1	2	3	4	5
4.	I think of myself as a health-conscious consumer.	1	2	3	4	5
5.	I often think about health issues.	1	2	3	4	5
6.	I think that buying a healthy chocolate is reasonable.	1	2	3	4	5
7.	People, who are important to me, think that I should buy a healthy chocolate. (Family, friends)	1	2	3	4	5
8.	Healthy chocolates are always sufficiently accessible.	1	2	3	4	5

Scenario 1

The X brand tablet chocolate that you see on the image is an ordinary chocolate and it is highly liked by consumers. This X brand of chocolate has a milk, bitter and white chocolate options.



Please mark the option that is suitable for you (1= Strongly Disagree, 5=Strongly Agree)

		Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1.	I have an intention to buy this product in the near future.	1	2	3	4	5

Note: The same crossword of Questionnaire 1 is applied to the sample.

Scenario 2

The X brand tablet chocolate that you see on the image is an ordinary chocolate and it is highly liked by consumers. This X brand of chocolate has a milk, bitter and white chocolate options.

This chocolate is produced by using healthy and 100% organic food stuffs.



Please mark the option that is suitable for you (1= Strongly Disagree, 5=Strongly Agree)

		Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1.	I have an intention to buy this product in the near future.	1	2	3	4	5

Appendix 5: Questionnaire 5

Dear Participant,

This questionnaire is implemented by Dokuz Eylül University MBA student Melisa Korkut for an academic purpose. Please answer the following questions by choosing the most appropriate option for you. Your participation for this survey is completely anonymous and voluntarily.

Thank you for your attendance.

1. Gender:

- ☐ Female
- ☐ Male

2. Age: _____

3. Education Level:

- ☐ Bachelor's student
- ☐ Master's student

4. Monthly income of your family

- ☐ 1000 TL and below
- ☐ 1001 TL-3000 TL
- ☐ 3001 TL-5000 TL
- ☐ 5001 TL- 7000 TL
- ☐ 7001 TL and above

5. I eat healthy chocolate (the chocolate that made of healthy ingredients) _____

- ☐ Everyday
- ☐ 2-4 times a week
- ☐ Once a week
- ☐ In every 15 days
- ☐ Once in a month
- ☐ Never

6. Please mark the option that is suitable for you (1= Strongly Disagree, 5=Strongly Agree)

		Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1.	I like eating healthy chocolate.	1	2	3	4	5
2.	I always check the ingredients of products to make a healthy chocolate choice.	1	2	3	4	5
3.	I choose food carefully to ensure my health.	1	2	3	4	5
4.	I think of myself as a health-conscious consumer.	1	2	3	4	5
5.	I often think about health issues.	1	2	3	4	5
6.	I think that buying a healthy chocolate is reasonable.	1	2	3	4	5
7.	People, who are important to me, think that I should buy a healthy chocolate. (Family, friends)	1	2	3	4	5
8.	Healthy chocolates are always sufficiently accessible.	1	2	3	4	5

Scenario 1

The X brand tablet chocolate that you see on the image is an ordinary chocolate and it is highly liked by consumers. This X brand of chocolate has a milk, bitter and white chocolate options.



Please mark the option that is suitable for you (1= Strongly Disagree, 5=Strongly Agree)

		Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1.	I have an intention to buy this product in the near future.	1	2	3	4	5

Note: The same crossword of Questionnaire 1 is applied to the sample.

Scenario 2

The X brand tablet chocolate that you see on the image is an ordinary chocolate and it is highly liked by consumers. This X brand of chocolate has a milk, bitter and white chocolate options.

Treat yourself to a unique, magnificent at the same time healthy and heart friendly chocolate!



Please mark the option that is suitable for you (1= Strongly Disagree, 5=Strongly Agree)

		Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1.	I have an intention to buy this product in the near future.	1	2	3	4	5

Appendix 6: Questionnaire 6

Dear Participant,

This questionnaire is implemented by Dokuz Eylül University MBA student Melisa Korkut for an academic purpose. Please answer the following questions by choosing the most appropriate option for you. Your participation for this survey is completely anonymous and voluntarily.

Thank you for your attendance.

1. Gender:

- ☐ Female
- ☐ Male

2. Age: _____

3. Education Level:

- ☐ Bachelor's student
- ☐ Master's student

4. Monthly income of your family

- ☐ 1000 TL and below
- ☐ 1001 TL-3000 TL
- ☐ 3001 TL-5000 TL
- ☐ 5001 TL- 7000 TL
- ☐ 7001 TL and above

5. I eat healthy chocolate (the chocolate that made of healthy ingredients) _____

- ☐ Everyday
- ☐ 2-4 times a week
- ☐ Once a week
- ☐ In every 15 days
- ☐ Once in a month
- ☐ Never

6. Please mark the option that is suitable for you (1= Strongly Disagree, 5=Strongly Agree)

		Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1.	I like eating healthy chocolate.	1	2	3	4	5
2.	I always check the ingredients of products to make a healthy chocolate choice.	1	2	3	4	5
3.	I choose food carefully to ensure my health.	1	2	3	4	5
4.	I think of myself as a health-conscious consumer.	1	2	3	4	5
5.	I often think about health issues.	1	2	3	4	5
6.	I think that buying a healthy chocolate is reasonable.	1	2	3	4	5
7.	People, who are important to me, think that I should buy a healthy chocolate. (Family, friends)	1	2	3	4	5
8.	Healthy chocolates are always sufficiently accessible.	1	2	3	4	5

Scenario 1

The X brand tablet chocolate that you see on the image is an ordinary chocolate and it is highly liked by consumers. This X brand of chocolate has a milk, bitter and white chocolate options.



Please mark the option that is suitable for you (1= Strongly Disagree, 5=Strongly Agree)

		Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1.	I have an intention to buy this product in the near future.	1	2	3	4	5

Note: The same crossword of Questionnaire 1 is applied to the sample.

Scenario 2

The X brand tablet chocolate that you see on the image is an ordinary chocolate and it is highly liked by consumers. This X brand of chocolate has a milk, bitter and white chocolate options.

This chocolate is indicated as a heart friendly chocolate by the Heart-Health Protection Foundation.



Please mark the option that is suitable for you (1= Strongly Disagree, 5=Strongly Agree)

		Strongly Disagree	Disagree	Neither Agree Nor Disagree	Agree	Strongly Agree
1.	I have an intention to buy this product in the near future.	1	2	3	4	5

Appendix 7: Questionnaire in Turkish

Sayın Katılımcı,

Bu anket çalışması Dokuz Eylül Üniversitesi İngilizce İşletme Yönetimi Tezli Yüksek Lisans Programı öğrencisi Melisa Korkut tarafından akademik amaçlı uygulanmaktadır. Lütfen aşağıdaki soruları size en uygun seçeneği işaretleyerek cevaplayınız. Bu ankete katılımınız tamamen anonim ve gönüllüdür.

Katılımınız için teşekkür ederim.

1. Cinsiyet:

☐ Kadın

☐ Erkek

2. Yaş: _____

3. Eğitim seviyesi:

☐ Lisans öğrencisi

☐ Yüksek lisans öğrencisi

4. Ailenizin aylık geliri.

☐ 1000 TL ve altı

☐ 1001 TL-3000 TL

☐ 3001 TL-5000 TL

☐ 5001 TL- 7000 TL

☐ 7001 TL ve üstü

5. _____ sağlıklı çikolata (sağlıklı malzemelerden üretilmiş çikolata) yerim.

☐ Her gün

☐ Haftada 2-4 kez

☐ Haftada 1 kez

☐ 15 günde 1 kez

☐ Ayda 1 kez

☐ Hiçbir zaman

6.Lütfen sizin için en uygun olan seçeneği işaretleyiniz (1=Kesinlikle Katılmıyorum, 5=Kesinlikle Katılıyorum)

		Kesinlikle Katılmıyorum	Katılmıyorum	Ne Katılıyorum Ne Katılmıyorum	Katılıyorum	Kesinlikle Katılıyorum
1.	Sağlıklı çikolata yemeyi severim.	1	2	3	4	5
2.	Sağlıklı çikolata seçimi yapmak için, ürünlerin içindekiler kısmını her zaman kontrol ederim.	1	2	3	4	5
3.	Sağlığımı garantiye almak için yiyecekleri dikkatlice seçerim.	1	2	3	4	5
4.	Kendimi sağlık bilincine sahip bir tüketici olarak düşünürüm.	1	2	3	4	5
5.	Sağlık sorunları hakkında sık sık düşünürüm.	1	2	3	4	5
6.	Sağlıklı çikolata almanın mantıklı olduğunu düşünüyorum.	1	2	3	4	5
7.	Benim için önemli olan kişiler, sağlıklı çikolata almam gerektiğini düşünürler.	1	2	3	4	5
8.	Sağlıklı çikolatalar her zaman yeterince ulaşılabilir.	1	2	3	4	5

Appendix 8: Scenarios of Turkish Questionnaire

Türkçe Anket Senaryoları		Yüksek İlgilenim Ürünü (Trüf Çikolata)	Düşük İlgilenim Ürünü (Tablet Çikolata)
Senaryo 1 <i>(Dürtme kullanılarak)</i>		Resimde gördüğünüz X marka trüf çikolatası köklü bir geçmişi olan, uluslararası bir markadır ve tüketiciler tarafından oldukça beğenilmektedir. Bir kutu X marka çikolata; sütlü, bitter ve beyaz çikolata çeşitlerini içermektedir.	Resimde gördüğünüz X marka tablet çikolata, sıradan bir tablet çikolatadır ve tüketiciler tarafından oldukça beğenilmektedir. Bu X marka çikolatanın; sütlü, bitter ve beyaz çikolata çeşitleri vardır.
Senaryo 2 <i>(Dürtme kullanılmadan)</i>		Senaryo 1'deki cümlelerin aynısı kullanılmıştır (Yüksek İlgilenim Ürünü) + İlgili dürtme tiplerinden biri eklenmiştir.	Senaryo 1'deki cümlelerin aynısı kullanılmıştır (Düşük İlgilenim Ürünü) + İlgili dürtme tiplerinden biri eklenmiştir.
Dürtme Tipleri	1. Dürtme	Bu çikolata, sağlıklı ve %100 organik malzemelerden üretilmiştir.	
	2. Dürtme	Kendinizi eşsiz, muhteşem, aynı zamanda sağlıklı ve kalp dostu çikolatayla ödüllendirin!	
	3. Dürtme	Bu çikolata; Kalp Sağlığını Koruma Vakfı tarafından kalp dostu bir çikolata olarak belirtilmiştir.	

Appendix 9: Examples of Nudge Theory Applications



Source: Alemanno, 2015:12



Source: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/60524/403936_BehaviouralInsight_acc.pdf (05.03.2019)



Source: <https://urbandesigncollective.wordpress.com/2018/01/01/nudging-for-change/> (05.03.2019)



Source: <http://www.bbc.com/future/story/20140417-road-designs-that-trick-our-minds> (05.03.2019)